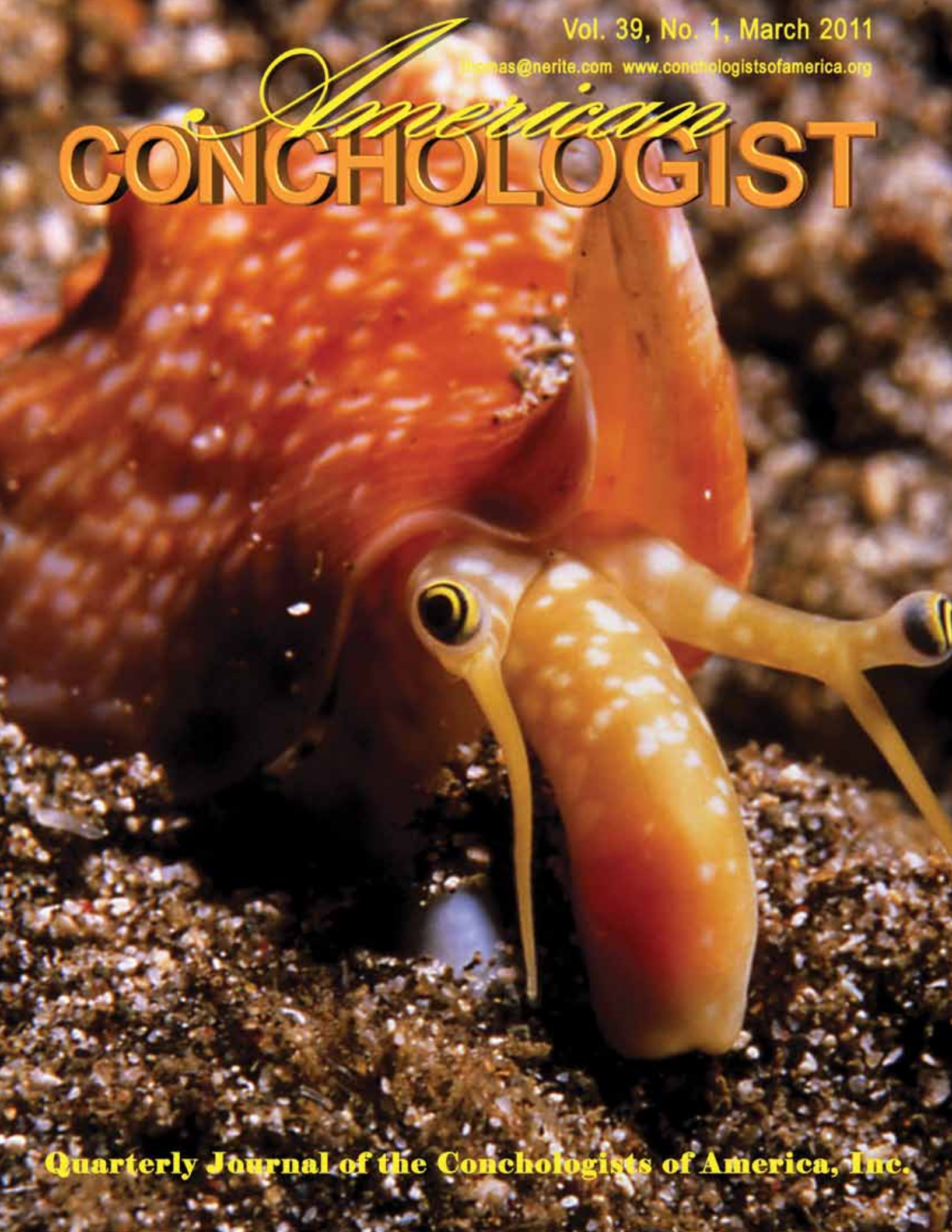


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American
CONCHOLOGIST



Quarterly Journal of the Conchologists of America, Inc.

CONCHOLOGISTS



OF AMERICA, INC.

In 1972, a group of shell collectors saw the need for a national organization devoted to the interests of shell collectors; to the beauty of shells, to their scientific aspects, and to the collecting and preservation of mollusks. This was the start of COA. Our membership includes novices, advanced collectors, scientists, and shell dealers from around the world. In 1995, COA adopted a conservation resolution: Whereas there are an estimated 100,000 species of living mollusks, many of great economic, ecological, and cultural importance to humans and whereas habitat destruction and commercial fisheries have had serious effects on mollusk populations worldwide, and whereas modern conchology continues the tradition of amateur naturalists exploring and documenting the natural world, be it resolved that the Conchologists of America endorses responsible scientific collecting as a means of monitoring the status of mollusk species and populations and promoting informed decision making in regulatory processes intended to safeguard mollusks and their habitats.

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Editor's notes: This is a rather grim issue in terms of our losses to conchology. The "In Memoriam" box on page 17 contains 8 names. While some were not unexpected, others were surprising and none is without an accompanying sense of grief. Peter Clarkson was a last minute addition to this list and he will be remembered in the next issue. All of these people added to our organization or to conchology as a whole, in one way or another. Each will be sorely missed.

-- COA CONVENTION--

Due to a slight mix up in mailing, the last issue had only some of the inserts for the COA Convention, 12-17 July, 2011, at Port Canaveral, Florida. The included inserts were enough to get members registered, but we missed the specialized inserts for shell shows and such. They are included in this issue. PLEASE BE ADVISED: all of the convention material is available online at the COA website: www.conchologistsofamerica.org. Just click on "conventions" and then on the links to "Conventions, Guidelines and Registration" or "Bourse Agreement," depending upon which you need. Specific questions about the convention can be addressed to Doris Underwood at: dunderwood13@cfl.com. If any of this is a problem or doesn't work, contact me at thomas@nerite.com or 505-896-0904 and I will try to chase down your question to find an answer. Our venue for this year's convention is the Radisson Resort (see the pictures on page 32 and below). We were there in 2001 and I am certainly happy for a chance at a repeat. While we won't have a shuttle launch this time, we will be staying at a beautiful spot with lots to do both at the hotel and in the local area.



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Front cover: *Euprotomus bulla* (Röding, 1798) feeding on algae at 60 feet depth on rocks during the day off Sulawesi, Indonesia. Photographed by Charles Rawlings. This species will still be listed under *Strombus* in most shell reference books, but was reassigned to *Euprotomus*. For a detailed look at genera assignments within Strombidae see the article by Winston Barney in the September 2010 issue (Vol. 38, No. 3).

Back cover: This Olividae montage was created by Nui-mul Bahar. He is originally from Bangladesh near the Bay of Bengal (thus his early interest in shells). He now lives in Trent in the U. K., where he is a histopathologist and a consultant. We will show more of his work in future issues.

A Moveable feast

by George Metz (photographs by the author)

There are many ways that mollusks gather their daily meal(s). There are also some generally colorful terms that all of you are probably acquainted with to describe these various activities. Animals that eat plants or their products are called herbivores. Molluscan examples would be Strombidae, Neritidae, Acmaeidae, and Littorinidae: all herbivorous grazers. Those that eat other animals are called carnivores. Molluscan examples would include Conidae and Muricidae. A third group eats both plant and animal and are called omnivores. Man is a good example of an omnivore, but it is a bit more difficult to find a mollusk that fits this description. Aquarists and conchologists who have kept Cypraeidae have reported some species, in a family thought of as herbivorous grazers, will actually feed upon fish and molluscan carcasses. Finally we have saprovores, animals that feed primarily on dead animal tissue, like the Nassariidae.

Another aspect of feeding is the variety of techniques used in obtaining food. Most bivalves and a few gastropods such as the Calyptraeidae are filter feeders. They induce a flow of water through the shell by ciliary action. This water is then filtered, straining out the microscopic material, which the mollusks use as food. Carnivores, such as Conidae and Turridae, track other animals, sometimes following chemical trails, and then use a modified tooth that delivers a toxin to kill their prey. Other gastropod carnivores such as Muricidae and Naticidae bore holes in the protective shells of other mollusks and feed directly on the body of the prey mollusk. Among the Cephalopoda, squid and octopuses are active hunters. Some animals feed on detritus which contains some edible organic material. The Turritellidae use strands of mucus-covered threads to sort through the detritus then draw the mucous threads back into the mouth. The majority of gastropods seem to be either herbivores or carnivores.

Another method of molluscan feeding, not often mentioned, is found with species using parasitism. While it is true that parasites might be considered carnivores, there are actually key differences. Parasites differ from carnivores in that the food they consumes is not the flesh of the prey animal. Instead the food is in the form of fluid, such as blood, lymph, or whatever the prey uses as a circulatory fluid. Another distinction is that carnivores usually kill their prey. Successful parasites feed on their prey, but do not generally kill, as that would eliminate their “dinner” permanently. Rather they continuously feed on their prey, enough to keep themselves alive, but not enough to kill the prey.

Surprisingly, there are a large number of gastropod families that feed in this manner; Pyramidellidae prey on bivalves and other invertebrates (Robertson, 2006), while Epitoniidae, Architectonicidae, and Coralliophilidae prey on Anthozoa. There are five other smaller families that feed on various organisms in a parasitic manner. The Cancellariidae, specifically *Cancellaria cooperi* Gabb, 1865, parasitizes the Pacific electric ray (*Torpedo californica* Ayres, 1855) as reported by O’Sullivan et al. (1987). Buck (1991) reports observing the same species parasitizing the big red sea urchin *Strongylocentrotus franciscanus* (A. Agassiz, 1863) and the sea star *Tethyaster canaliculatus* (A. H. Clark, 1916). Johnson et al. (1995) reported parasitism on sleeping parrotfish by



1. Unidentified eulimids (two very small white shells in the center of the image) on the holothurian *Isostichopus fuscus* Ludwig. Photographed in shallow water in the Sea of Cortez Baja, Mexico.

several species of Colubrariidae and at least two species of the family Marginellidae.

There are also several descriptive terms or characters used in discussing the lifestyle of parasites. First they may be obligate parasites, meaning that they cannot live independently of their host. They cannot electively leave their feeding site or death might occur. With mollusks this generally means they do not have a retractable proboscis and will be fatally injured if removed. The proboscis is a long flexible muscular tube that allows the animal to bore into the prey and suck out fluids. The opposite of this state are the nonobligate parasites like eulimids with a retractable proboscis. This allows the parasite to remove itself from the host without damage and move to another host (Fig 1).

A second character is the position of the parasite on the host. Ectoparasites exist on the outer surface of the host. Endoparasites live within the lumen of the intestinal tract or within the intestinal wall itself. Some molluscan genera that live within the wall of the intestine have through time reduced or lost their shells. Many genera feed on the external surface of the prey animal, eating the surface epithelial cells (an exception to the fluid eating characteristic). Others penetrate the surface with their proboscis and successfully enjoy the circulatory fluid of the host and later may voluntarily retract their proboscis and drop off the prey. This sounds a little like a “vampire” movie without the transformation into a bat.

One of the most efficient families among molluscan parasites is the Eulimidae. The family is quite large with hundreds of genera and numerous species that closely resemble each other or show only very subtle differences, making correct identification difficult. The shells are generally small and conical, 4-15mm in length, and shiny white, although both globose and limpet-like forms occur. These mollusks have an exclusive association with a single phylum of prey animals, the Echinodermata, involving



2. (above) Gall on *Eucidaris thoursii* (Valenciennes), in the Sea of Cortez, Baja, Mexico.

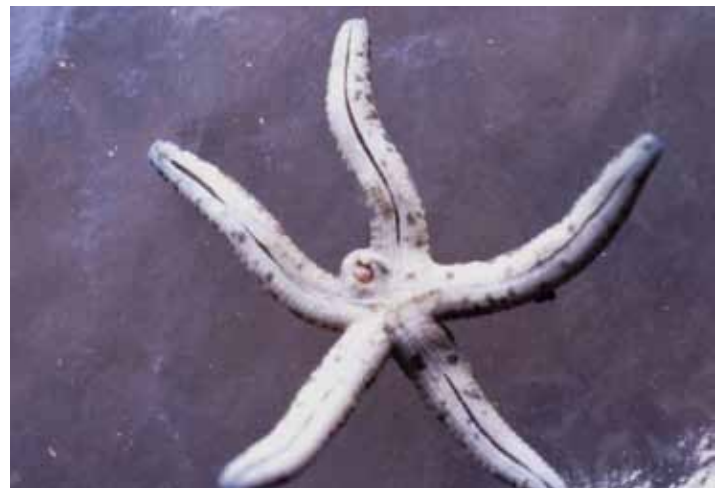
3. (below) Opened gall showing *Sabinella shaskyii* Warén, 1992, in the Sea of Cortez, Baja, Mexico.



members of the classes that include sea stars, brittle stars, sea urchins, and sea cucumbers. Each species of eulimid is parasitic exclusively on the members of one class or genus and often limit its feeding activities to only one or two species. A very thorough and lucid explanation of the Eulimidae, including their biology, morphology, and reproductive strategies, as well as a full discussion of all the currently recognized genera, is found in a monograph of the family by Anders Warén (1983).

There are some spectacular and unique prey/host relationships among this group. One of the mysteries to me is how a eulimid can drop off of a moving holothurian. Why give up a known meal source for an unknown source? Does the eulimid just wait till another holothurian wanders by? Where does it wait? How does it know when the next one is coming? The eulimid groups that attracted my interest are those groups that take up permanent residence on the echinoderms of their choice, in other words obligate parasites.

In the waters of the eastern Pacific, specifically the Sea of Cortez, the eulimid species *Sabinella shaskyii* Warén, 1992 parasitizes the sea urchin *Eucidaris thoursii* (Valenciennes,

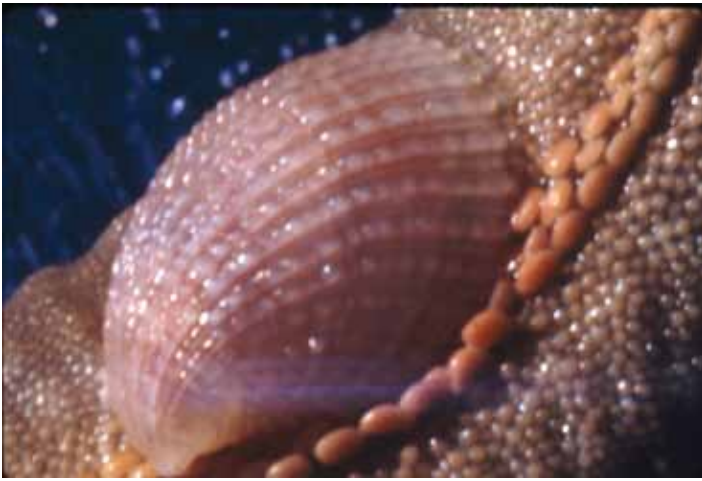


4. (above) *Stilifer* gall on an Indo-Pacific sea star.

5. (below) *Stilifer* species in a gall that has been opened.



1846), also known as the slate pencil sea urchin. The spines of this sea urchin are quite thick and the outer epidermis has a sandpaper-like texture. These sea urchins are common in rocky areas and are usually wedged among the rocks. If enough specimens are examined one will eventually find an urchin with a swelling on the tip of one of the spines. This swelling is commonly referred to as a "gall" (Fig. 2). The roof of the gall is very thin. If the end or tip of the gall is opened carefully a small cavity can be exposed. When examined with a little magnification the eulimids within this cavity can be seen. There are usually two or more shells in each gall. The large shell is usually a female and the smaller shells male. There may also be some egg cases (Fig. 3). The eulimid is entombed in the gall cavity and is very successful there. In the Caribbean, there is a similar species of sea urchin and a eulimid of the same genus (*Sabinella*) as the Sea of Cortez eulimid that develops in a very similar appearing gall. Both the sea urchins and the eulimids from the two separate areas are obviously closely related and most likely developed into separate species after the land bridge formed by the isthmus of Panama joined the two Americas (during the Pliocene, about 3-5 million years ago) and separated the oceans.



6. *Thyca (Besomia) callista* Berry, 1957, on the sea star *Phataria unifascialis* in the Sea of Cortez.

Some genera such as *Stilifer* also create “galls” in various species of sea stars (Fig. 4). They accomplish this by boring through the exoskeleton of the sea star and penetrating the coelom (a cavity filled with nutritious fluids) with their proboscis. The female and the male become encased in a pseudopallium. The pseudopallium is a portion of the mantle that lines the cavity for protection and storage of eggs. The epithelial surface of the sea star grows back over the cavity, forming a “gall” (Fig. 5). If you are in a tourist area, particularly on either one of the North American coasts, where shell shops usually abound, you will nearly always find a basket or bin of dried starfish. Examine them carefully for galls. If you find one with a gall, first, pay for it. Then, at your leisure open it carefully and you might find a member of the genus *Stilifer*.

The last eulimid I want to discuss also parasitizes sea stars but in a more complex fashion. There are several species in the genus *Thyca*, all of which act in the same manner. *Thyca* are limpet-shaped shells and appear as if they should belong to Acmaeidae or other limpet-like families. *Thyca crystalina* (Gould, 1846), occurs throughout the Pacific. It is limited to preying on members of the sea star genus *Linkia*. It preys on the species; *Linckia miliaris*, *L. multiforis*, and *L. laevigata*. The shell and its prey are beautifully illustrated on the back cover of the *American Conchologist* vol. 32(3) (2004). A second species *Thyca (Besomia) callista* Berry, 1959 is found in the eastern Pacific and the Sea of Cortez. It preys on sea stars of the genus *Phataria*, specifically the species *P. unifascialis* and *P. pyramidata*.

Thyca have an interesting biology. The fertilized eggs float in the water column until they find the sea star of their choice, where they settle on the dorsal surface. While migrating to the ventral surface of the host they continue to develop in size until they find the periumbilactral groove. Once in position, they drill through the surface epithelium and the exoskeleton into the coelom, where they feed for the life of the sea star (Fig. 6). They become so fixed to the sea star that the proboscis fuses in the scar tissue of the host. Because of this they are fixed in place for life: obligate parasites. The advantages are that they have food for life and they have solved the reproductive problem, by allowing the male to become fixed to the female's body beneath her shell, where he feeds on the female's body fluids (Fig. 7).



7. Underside of female *Thyca callista* with the edge of the male shell at the two o'clock position on the body of the female, Gulf of California.

This is a fascinating family to observe and I hope this short account will stimulate *American Conchologist* readers to examine every echinoderm found when collecting in warm waters or purchased in a tourist shop. It might have a hitchhiker!

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Another sinistral *Notocypraea* and some interesting observations

Don Cram

I read with interest the excellent article on sinistral cowries by Harry Lee in the September 2010 issue of *American Conchologist*. Of particular interest was his reference to the *Notocypraea declivis* (G.B. Sowerby III, 1870) briefly mentioned in Griffiths's 1962 review. The specific reference was this entry between his descriptions of *Notocypraea declivis* and *Notocypraea dissecta* (Iredale, 1831): "Remarks: The only sinistral specimen of *Cypraeidae* known to the author is in the South Australian Museum" (SAM). In April 1975 I wrote to the museum (SAM) inquiring about this shell, but a reply from the Curator of Marine Invertebrates, Dr. Zeidler, via his assistant Caroline Ristic, stated that no reference in their records to this or any other specimen of a sinistral *Cypraea* could be found.

Lt. Col. R.J. Griffiths (ex British Army) and a collector with a special interest in *Cypraea* since the early 1950s arrived in Victoria in 1958 and during the next two years most of his *Notocypraea* research was done by collecting widely, describing one new species, making many radular mounts, visiting all major museums, identifying specimens, and completing his review. I had access to much of his material extant in the Australian Museum Sydney, Western Australian Museum, the National Museum Melbourne (now Museum Victoria (MV)), and the SAM, where in 1959 he examined Sir Joesph Verco's original specimens of *Notocypraea euclia* (Steadman & Cotton, 1946), trawled in 1912 off Eucla, Western Australia, making one radular mount (Cram 2009 & 2010). Some time in 1960 he started a nature park (Sea Acres Sanctuary) at Port Macquarie, NSW, which he sold about a decade later, also selling his shell collection, and he then disappeared from the scene. His work was meticulous, initialing and dating most of it, and I am sure the sinistral *Cypraea* (he did not specifically state *declivis*) did exist but has since been lost.

On 24 February 1995, Mrs Alena Bubenicek of Victoria, a member of the Malacological Society of Australia (MSA), collected some *Notocypraea* specimens from the Lighthouse Reef at Port MacDonnell, but did not realize until several days later while cleaning the shells that she had a sinistral specimen of *Notocypraea comptonii* (Gray, 1847). This specimen (here illustrated for the first time) shown at a branch meeting and reported in the Victorian Branch Bulletin (VBB) No. 180, August



A composite image of the first known sinistral *Notocypraea comptonii*, collected by Mrs. Alena Bubenicek from the Lighthouse Reef at Port MacDonnell, South Australia in 1995. Also shown is the original data slip. The shell measures 22.8mm in length, 15.1mm in width, and 12.1mm in height. From photographs by Dr. Platon Vafiadis.

1995, appears to be the first sinistral specimen ever collected of *Notocypraea comptonii*.

On 8 January 1974, while collecting with family at this same Lighthouse Reef, we were watching six *Notocypraea* specimens we had collected, three normal *N. comptonii* and three pure white (*casta* form) crawling around in the collecting bucket. At this time and to our astonishment, two normal and two pure white specimens decided to mate. The male specimens with their penises visible, situated just to the rear of the right hand tentacle, approached the females by crawling up from behind to approximately one third of the way along the left hand side of the females and they immediately became locked together.

After watching this for a brief time I made a dash for a camera, some 50 meters away in the car. By the time I got it set up the activity was just finishing, but the photo revealed the mating position and the penis of the male is still visible. In hindsight it would have been better to have stayed and watched. As the female genital aperture is toward the right rear behind the mantle cavity, it appears as though the penis, which in the preserved state is approximately one third the length of the shell, reaches across the

body of the female and inserts only the tip into the genital aperture. This raises an interesting question: are these organs and all others reversed in the body of a sinistral specimen? Alena wishes now that she had realized prior to cleaning that her specimen was sinistral, as she would have tried to keep the animal intact. Is it also significant that the specimens chose partners of the same variety?

On 5 February 1978, while photographing some *Notocypraea* collected at Flinders Ocean Reef, I was surprised that one specimen of *Notocypraea angustata* (Gmelin, 1791) discharged a magenta dye from the right rear of the animal while crawling in a dish of sea water. This fortunately occurred while looking through the lens at the specimen and I now have a record of this on a 35mm slide. I have not seen this in any other specimen of southern or tropical cowry I have collected before or since. I have shown the slide at various shell club meetings and reported it in VBB No. 151 October 1990, without any further evidence of this happening with any species of cowry. It appears this may be a defense mechanism to discourage predators.

Autotomy has been observed (Griffiths, 1962a) in juvenile specimens of *N. angustata*, when he and Mr Altorfer of Port MacDonnell made a collecting trip together in 1960. Oliviform specimens were observed discarding part of their foot when retracting into their shells on being picked up. There is obviously still a lot to be discovered about this fascinating group of cowries.

I would like to thank Alena Bubenicek for the loan of the specimen to study, Robert Burn and Platon Vafiadis for interesting discussions on cowry anatomy, and Platon Vafiadis for photographing the shell. Finally thanks to Mrs Hope Black (née Macpherson), Curator Emeritus of Museum Victoria and co-author with Charles Gabriel of *Marine Molluscs of Victoria*, for information on R.J.Griffiths whom she personally knew. She was curator at MV when he was conducting his *Notocypraea* research.

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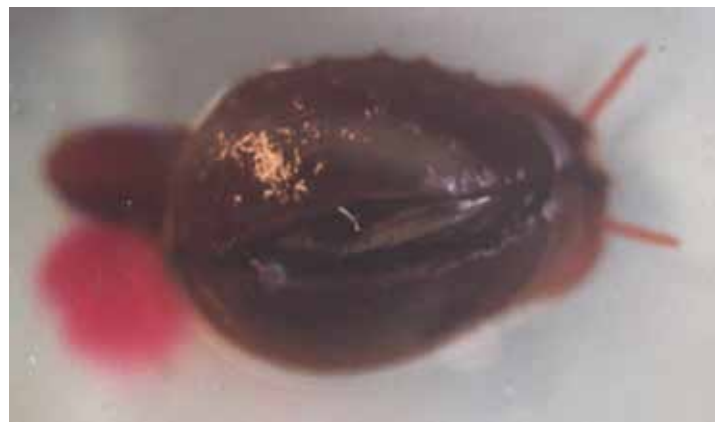


A side-by-side comparison of Mrs. Bubenicek's sinistral *N. comptonii* (left) and a similarly sized specimen (right) in the author's collection that was collected from the same reef at Port MacDonnell. Photographs by Dr. Platon Vafiadis.



(Above) A pair of *Notocypraea comptonii* just after mating. The male is on the right; the female (retracted into her shell) is on the left.

(Below) *Notocypraea angustata* releasing what appears to be a dye, a previously unrecorded activity.



The curious case of Conchology versus Malacology

S. Peter Dance

Two words, one idea

What is *conchology*? That is a question I usually find difficult to answer. On one occasion in the early 1960s I found it unanswerable. At the time I was on the staff of the Natural History Museum in London, where I was responsible for curating its huge shell collection. It would have been reasonable to assume someone occupying that position would know something about shells and their inmates. Someone connected with the making of radio programs made that assumption and it led to my first radio interview. The interviewer opened up with, "Now, Mr Dance, can you tell us, what is *conchology*?" I was dumbstruck and wished the ground would swallow me up. Lamely, I said, "Please don't ask me that. Can we start again?" Fortunately, we could, because the programme was pre-recorded. This was not my finest hour. If I am honest, I had suffered an attack of stage fright. Encapsulating in a few words the essence of my main interest in life at that time was not only difficult but impossible.

Less often I am asked, "What is *malacology*?" My usual answer is not very helpful, something like, "It's the same as *conchology*, really, the study of mollusks in the widest sense." I may explain further that *conchology* is the earlier term, but is mistakenly considered by some to be restricted to the study of molluscan shells. A year or two after my stuttering attempt to conquer the airwaves, I began the research for my first book, *Shell Collecting, an Illustrated History* (Dance, 1966). At an early stage I realised I could not use both of these terms indiscriminately, but would have to choose one or the other. Having investigated the origins and usages of each, I devoted a section of the book (Appendix III, pp 270-274) to an elucidation of the problem they posed. Some of its main points I shall repeat here.

In 1742, in a pioneering book about shells and fossils, a Frenchman, A. J. Dezallier d'Argenville (1680 - 1765), coined the term *conchyliologie*, derived from two Greek words, *konkylion* (little shell, but it may also mean the animal within) and *logos* (discourse) (Dezallier d'Argenville, 1742). I produced evidence to suggest that he intended *conchyliologie* to mean the study of mollusks as a whole and not merely their shells. Almost thirty years later the equivalent English term, *conchology*, made its first appearance in print, in a book attributed to E. M. da Costa, an industrious and unconventional character, of mixed parentage but born in England (da Costa, 1771). Written while he was serving a prison sentence for embezzlement, the book was never completed and never had a title page, but it is generally known under the title of *Conchology, or Natural History of Shells*. The word *conchology* appears only once in its few pages and is not defined therein, but as it is obviously a translation of *conchyliologie* it may be considered to have the same meaning. A few years later another Frenchman, Christophe Elizabeth Favart d'Herbigny (1725 - 1793) defined *conchyliologie* as "...the science which deals in general with testaceous animals or those covered with a test known as a shell, or the knowledge of shell-fish of the sea, the land and fresh water" (Favart d'Herbigny, 1775). Da Costa, who was familiar with French scientific literature, may soon have come across Favart d'Herbigny's book and seen the definition of



(Above) The faceplate (left) and title page (right) of d'Argenville's *L'Histoire Naturelle* where he introduced the term *conchyliologie* in 1742.

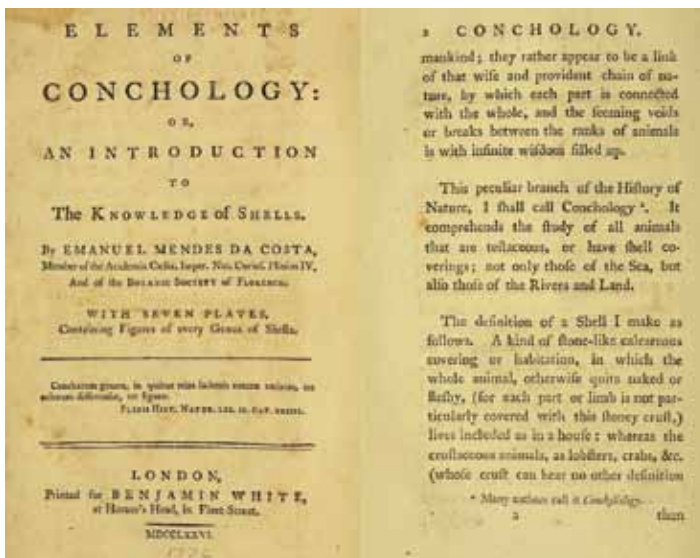
(Below) A.J. Dezallier d'Argenville is perhaps better known for his writings on formal gardening (landscaping) than his work on mollusks. He was a member of the Royal Society. It was this organization from which Costa embezzled money and was subsequently sent to prison where he wrote his unpublished *Conchology, or Natural History of Shells* in 1771.



conchyliologie therein. It is not surprising, therefore, that he seems to have adapted it for use in his own *Elements of Conchology*, published in the following year, thereby providing a definition of *conchology*, the word he had not defined when introducing it to the English language five years earlier (da Costa, 1776).

Après Rafinesque le deluge!

It was not until 1814 that the term *malacologie* was introduced, without a definition, in a treatise on the nomenclature and classification of animals and plants (Rafinesque, 1814). Born

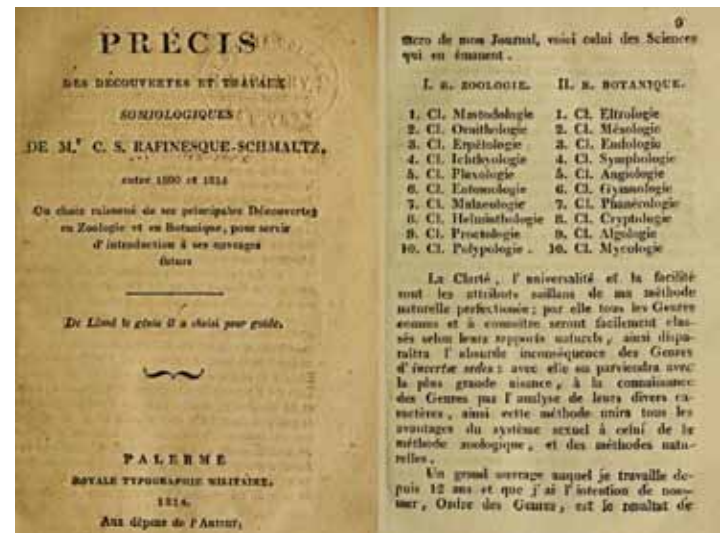


Da Costa's *Elements of Conchology* published in 1776: title page (left) and page 2 (right) where he defines conchology, probably based upon the earlier work of the Frenchman Favart d'Herbigny.

in Turkey, but of French extraction, C. S. S. Rafinesque (1783 - 1840) was clever but wildly eccentric. His *Somiologiques* (1814), a rare oddity like himself, is not easily understood. His text makes it clear, however, that *malacologie* was his term for the study of mollusks, as he understood them, i.e. mollusks in their entirety, not just their shells. A few years later the term appeared again, in a treatise published in 1825 by the French zoologist H. M. de Blainville (1777-1850), who considered *conchyliologie* signified the study of molluscan shells, rather than molluscan animals. He wanted to adopt *malacologie*, an abbreviation of *malacozoologie*, derived from the Greek words *malakos* (soft), *zoion* (animal) and *logos* (discourse). He defined *malacologie* as "...a rational discourse or treatise on soft-bodied animals," but the definition, it seems, applies not only to the soft bodies of mollusks, but to the soft bodies of other invertebrates, as well. Moreover, his book is entitled *Manuel de Malacologie et de Conchyliologie*, implying, as do its contents, that *malacologie* was not an all-embracing term. For de Blainville the study of molluscan soft parts was *malacologie*, the study of molluscan shells being *conchyliologie*. Ever since, there has been disagreement about the usage of the terms *conchology* and *malacology* (or their equivalents in other languages).

Agreeing to differ

In Appendix III of my book I said that the pendulum seemed to have swung in favour of *malacology*, possibly because the 'scientific' fraternity was keen to promote a term supposedly accentuating the importance of the soft parts. I was quick to point out that *conchology*, much the older term, had been favoured by, among others, G. P. Deshayes (1797-1875), an eminent authority on the Mollusca. In his *Traité élémentaire de Conchyliologie* he said that because the soft parts produce the shell it was impossible to make two sciences out of two inseparable things (Deshayes, 1839-58). This and a conviction that the older term should precede the younger in a book chronicling the history of shell collecting,



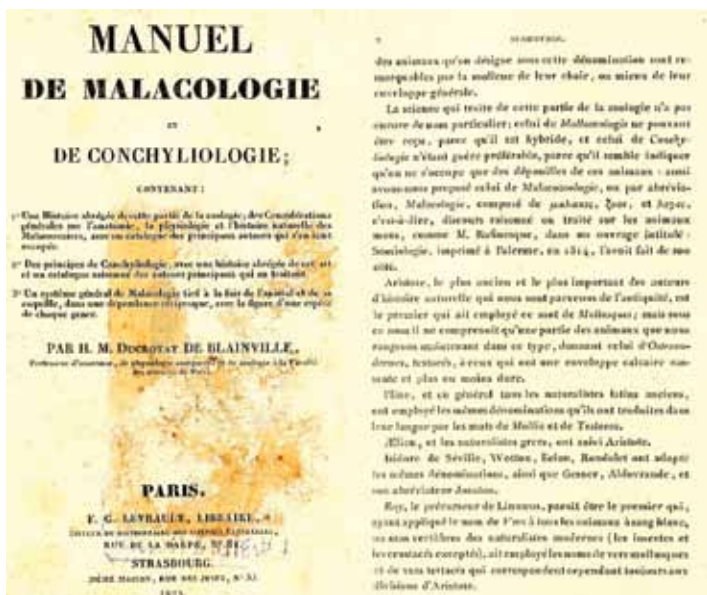
(Above) The *Somiologiques* by Rafinesque, published in 1814, with the title page (left) and page 9 (right) where he lists malacologie as the study of mollusks.

(Below) Constantine Samuel Rafinesque was a botanist, zoologist, malacologist (his term), meteorologist, linguist, and anthropologist. His writings on early Native American culture have been both lauded (he helped decipher ancient Mayan and recorded numerous early American earthworks, many later destroyed by development) and labeled as a hoax (his writings on the Lenape of Eastern North America were later determined to be false).



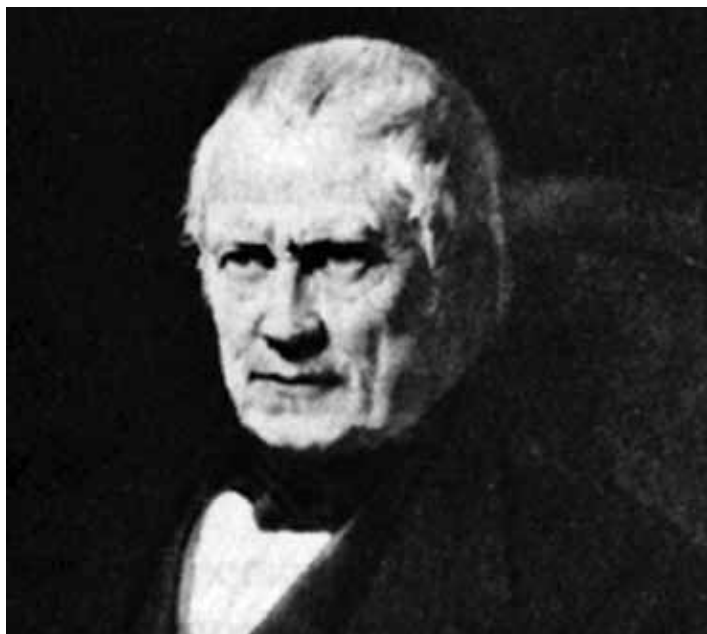
sufficed for me to prefer *conchology*.

I chose *conchology* partly because of its etymology and partly because it had been in use for many years before *malacology* came on the scene. Another way of looking at the problem, however, was proposed by Robertson (1990). It was not etymology or priority that should decide the issue, he said, but usage – and emotions! The two opposing views were deep-seated, he said, and he instanced the names of four leading organizations devoted to the study of mollusks: the American Malacological Union and the Conchologists of America in the USA, the



(Above) De Blainville’s *Manuel de Malacologie* (1825), title page (left) and page 2 (right) where he defines his terms (separating conchology and malacology) and references Rafinesque’s use of malacology.

(Below) Henri Marie Ducrotay de Blainville was both a zoologist and an anatomist. He was a member of the French Academy of Sciences and in 1830 was appointed to succeed Jean-Baptiste Lamarck as Chair of Natural History at the Paris Museum.



Malacological Society of London and the Conchological Society of Great Britain and Ireland in the UK. Surprisingly perhaps, he also said that “the first syllables of *mollusk* and *malacology* are conveniently similar.” Having gone over much the same ground as I had previously, he admitted his arguments in favour of *malacology* were “slender” but considered the case for *conchology* was no better. “To me, a biologist,” he said, “the term *malacology* is preferable to *conchology* for the modern branch of zoology concerning mollusks.” To me, more a historian than a biologist,

the term *conchology* is preferable. Perhaps we should agree to differ!

Resolution - of a sort

It is curious that two conflicting, although possibly synonymous, terms have long been and still are in use for the study of one of the major divisions of the Animal Kingdom. There could be a simple reason for this. Someone with an essentially scientific appreciation of mollusks - and possibly an associated career - is more likely to favour *malacology* and may want to be known as a *malacologist*. On the other hand, someone for whom the appeal of mollusks, especially their shells, is essentially aesthetic, may favour *conchology* and be happy to be known as a *conchologist*, or even a ‘shell collector.’

That things were seen differently a century ago is obvious from the following statement, published by the Brooklyn Conchological Club. “With us,” it said, “the word *conchology* is not limited in meaning to the study of shells only, but extends to the study of mollusks in general, both recent and fossil; and the word *shell* is often used as a synonym of mollusk.” (Anon, 1907) This could have been written by Deshayes himself – or me! In 1966 I came down on the side of *conchology* and am happy to remain there. Probably Robertson would be equally content to stand by what he said in 1990. Mindful of these two contrary views, I have nothing more to add to the debate but a tongue-in-cheek aphorism. *Conchology* is what you do if you like shells: *Malacology* is what you do if you’ve been to university!

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I am most grateful to Tom Eichhorst for taking a close interest in my article and especially for pointing out the probable connection between publications by da Costa and Favart d’Herbigny.

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Conch shells on coins

Jesse Todd

Photographs by Lance K. Trask

It is interesting that of the coins of the world that display shells, the majority display conch shells. Of course conch shells are usually large and, in most cases, quite beautiful. In this article coins displaying conch shells are illustrated and I present some of the major uses of these shells by various cultures. Humans have been fascinated with and used marine as well as terrestrial shells for over 10,000 years and, for Lance and I, we believe the people had and have excellent taste. [Editor: Recent research has pushed back this date to at least 40,000 years ago and possibly earlier still.]

shell trumpets are usually made with the apex removed (Figure 2), but some Pacific Islanders perforate the shell and blow the shell sideways as illustrated in Figure 3.



Figure 1. Coins with Triton shells from a) Vanuatu, b) Seychelles, c) Maldives, and d) the Cook Islands.

Charonia sp.

The triton shell is portrayed on most of the coins used in this article. The shells come from Pacific Islands and islands in the Indian Ocean where they were often used as trumpets. *Charonia* species used in such a manner include *C. lampas* (Linnaeus, 1758), *C. variegata* (Lamarck, 1816), and, most often, *C. tritonis* (Linnaeus, 1758). The sea god Triton, for which the species *Charonia tritonis* is named, is often depicted blowing a shell trumpet. Such trumpets were used in the Mediterranean area, the Pacific Islands and Japan, as well as other places. Triton shells were used as trumpets in Italy as far back as the Neolithic (circa 5150 B.C.). In the oral tradition of the people of western New Guinea, Snake blows the Triton shell and tells the people that since they struck him, he will lie in wait to bite them. In many Pacific Islands, the conch shell was blown as a sign of war, a sign of victory, and in announcing the presence of the chief. Triton



Figure 2 (above). Man blowing conch shell at the apex, as shown on a portion of a post card from Hawaii.

Figure 3 (below). Man blowing conch shell trumpet from hole in the spiral portion of the shell, from a portion of a post card from Fiji.



Turbinella pyrum

Turbinella pyrum (Linnaeus, 1758) is the sacred chank of Hinduism and Buddhism. Two coins (Figure 4) portray the sacred chank and both are from areas where it is an important part of the religion. Its major function is that of a trumpet similar to the one illustrated in Figure 5. According to the *Bhagavat-Gita*, the gods had their own chank trumpets which they blew when they went to war. Krishna's trumpet was named Panchajanya. He took the shell trumpet from a marine demon. Bangles, necklaces and rings were made from the *T. pyrum* shell and it was used a currency

as well. Shell bracelet manufacturing in the Indus Valley dates to the Neolithic, circa 7000 to 6000 B.C. Rings also served the medical purpose of warding off skin diseases. The Maharaya of Travancore weighed himself as part of the coronation ritual and his weight was matched in gold coins that carried the imprint of the sacred chank shell. One can find silver coins from Dvaravati (which today is part of Thailand) on that date to circa A.D. 600 imprinted with the image of the sacred chank on EBay.

In China, the Spirit of the Conch Shell (the sacred chank) controls the weather and protects against sea dangers. In Tibet, every sailor carried a shell to blow to frighten away the sea dragon which overturned ships.



Figure 4. Coins portraying the sacred chank from a) Travancore and b) Bhutan.



Figure 5. Trumpet made from *Turbinella pyrum*.

Strombus gigas

Strombus gigas Linnaeus, 1758, is portrayed on a coin from the Bahamas (Figure 6) where it is a major food resource. Like other large gastropods, *Strombus gigas* was often used as a trumpet. In Andean prehistory, the sound of the *Strombus* trumpet represented a god speaking and the conch was blown at ceremonies by the Aztecs. At interior temple sites in Mexico, *Strombus* images were carved in stone and were votive offerings (along with other marine shells). Since the Aztec capital was inland, they brought the ocean to them. The *Strombus* is especially associated with Quetzalcoatl who went to the underworld, blew the conch shell, and brought humans back to life. During the ceremony to Tlaloc for rain in the Central Highlands of Mexico, the *Strombus* shell was used like a boxing glove by the Maya. The resulting blood-letting was considered an important part of the ceremony. The outer lip of the *Strombus* shell was used to make celts and adzes (hand axes) and the columella was used to make gouges.



Figure 6. *Strombus gigas* image on a coin from the Bahamas.

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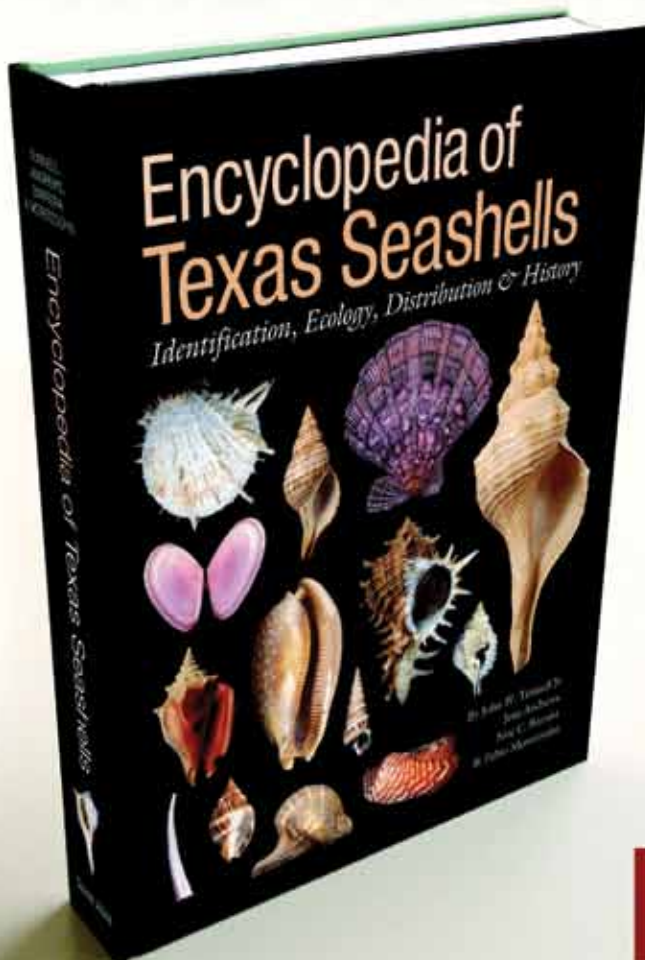
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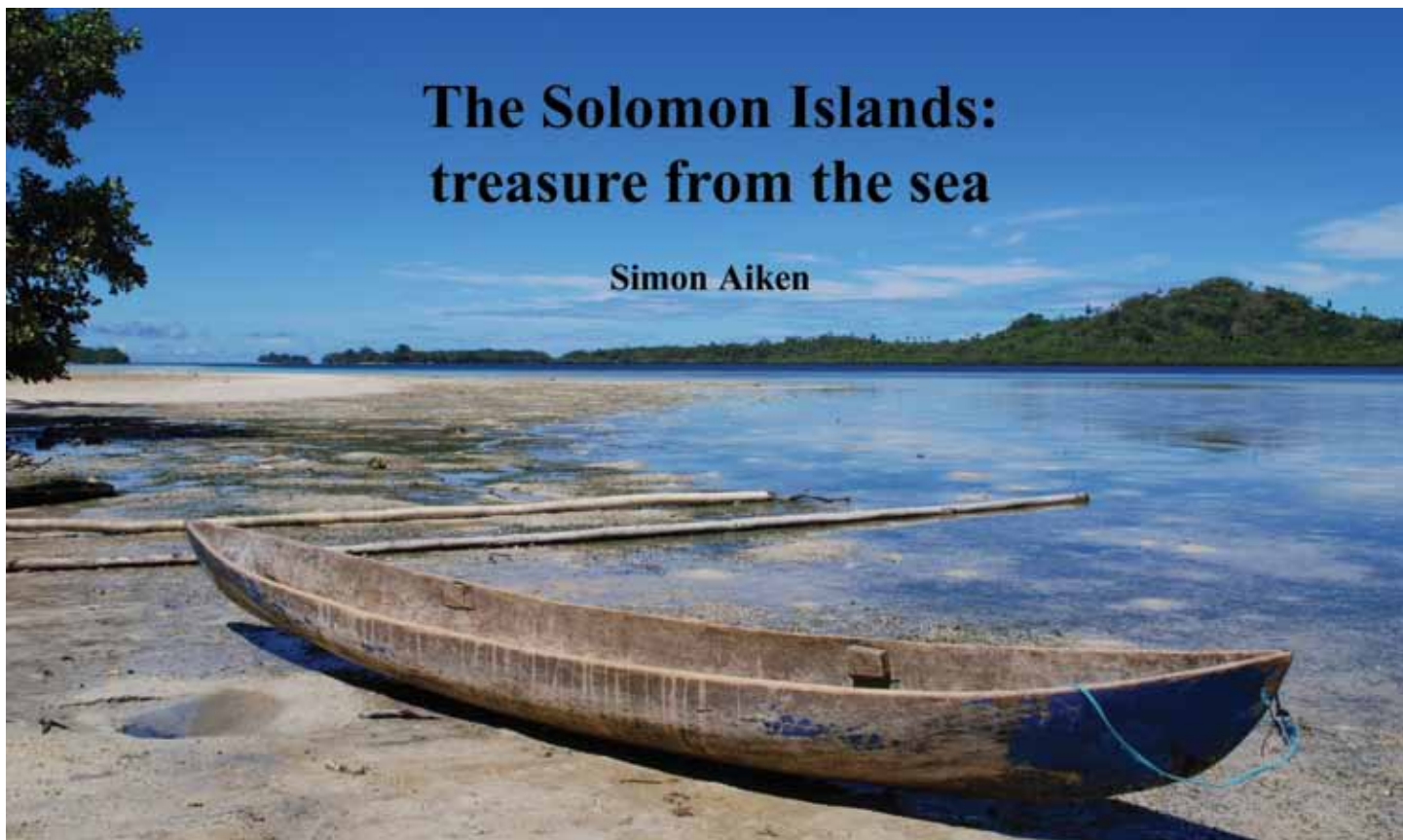
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The Solomon Islands: treasure from the sea

Simon Aiken



When the Spanish explorer Don Álvaro de Mendaña ‘rediscovered’ this archipelago in 1568, he believed he had found the source of King Solomon’s fabled treasure. Mendaña’s dreams were soon tarnished, and he died of malaria shortly afterwards, but the Spanish name “*Yslas de Salomon*” stuck. I visited the Solomon Islands in August 2010 in search of molluscan treasure.

Jet travel has made trips to the Solomons easier than was the case in Mendaña’s time, but still grueling. Visitors arrive in the capital, Honiara, from Brisbane, Australia. For European shell collectors, Brisbane is the opposite side of the globe, so the long-haul flights are then followed by a ‘backwards’ flight over the Coral Sea to the Solomons. The round-trip from Europe requires a daunting six days of travel and visitors from North America fare little better. More adventurous souls than I may opt to fly to Papua and make their way by sea canoe to the northernmost island groups of the Solomons – a traditional trading route, but fraught with dangers.

The 922 islands that make up the Solomons have a combined land area somewhat less than the state of Maryland. It is their 3,300 miles of coastline that is the main attraction for shell collectors. There are mangrove swamps and extensive lagoon areas. The larger islands like Guadalcanal are ruggedly mountainous and densely forested - challenging habitats for landsnail collectors to explore.

Transport between islands is usually by canoe, even for worryingly long journeys. The traditional ‘dug-out’ canoe in the picture above was my principal means of transport around Marau Sound, in the south of Guadalcanal. This was one of the more seaworthy vessels I used, although it paid to be handy with the ‘baler’...

Most conchologists, amateur and professional, have their ‘wish list’ of countries they’d like to visit. I have *my* list, and it’s long. So, why the Solomons? A decade ago I was obtaining a good range of shells from the Solomons, but the flow then ‘dried up’. I wanted to see for myself whether these islands were still a potential treasure-trove of shells and to find out why the shells were no longer coming out.



(Above) Most of the islands in the Solomons archipelago are low-lying coral atolls with shallow-water lagoons. Although transportation to most of these islands is problematic, such localities are rich molluscan habitats and can be a paradise for snorkelers. This picture was taken while flying over the Solomon Sea and shows Kisa, Lologhan, and Laumuan Islands, in the Russell Islands group.



(Above) *Palmadusta humphreysi* (Gray, 1825) from Marau Sound. The variation in color, pattern, and size (smallest 12.6mm, largest 22.3mm) is striking. These specimens are from a small area near Simeruka Island, collected at night by snorkeling. *P. ziczac* (L., 1758), shown at bottom right, is a closely related species from the same locale (19.4 & 20.3mm).

(Middle) *Lyncina aurantium* (Gmelin, 1791), the golden cowrie, selected as the highest denomination postage stamp in a special “Cowries of the Pacific” set issued by the Solomons in 2002.

(Below) A Melanesian diver displays a live *L. aurantium* he caught in Marau Sound. This shell is much rarer here than in the Philippines, but appears very similar morphologically.



(Above) In the 'Are'are language of the Marau peoples, seashells are called “puriruri.” Marau Sound is a delight for *Cypraea* collectors. With the help of local villagers I found 35 species around just one small island. The shells illustrated here were collected by snorkeling or by turning rocks at low tide. All are illustrated to the same scale. 1. *Erosaria eburnea* (Barnes, 1824), 33.8mm; 2. *Cribrarula catholicorum* (Schilder & Schilder, 1938), 12.1mm; 3. *C. cribraria zadela* (Iredale, 1939), 16.1mm; 4. *Nucleolaria nucleus* (L., 1758), 16.8mm; 5. *Erronea caurica* (L., 1758), 38.0mm; 6. *Lyncina carneola* (L., 1758), 20.1mm; 7. *Palmadusta clandestina candida* (Pease, 1865), 20.6mm; 8. *Purpuradusta fimbriata* (Gmelin, 1791), 8.9mm; 9. *Erronea cylindrica lenella* (Iredale, 1939), 28.2mm; 10. *Pustularia margarita* (Dillwyn, 1817), 12.2mm; 11. *Ransoniella punctata* (L., 1771), 10.8mm; 12. *Ovatipsa chinensis amiges* (Melville & Standen, 1915), 29.1mm; 13. *Erronea chrysostoma* (Schilder, 1927), 27.7mm; 14. *Eclogavena coxeni hesperina* (Schilder & Summers, 1963), 17.7mm; 15. *Luria isabella* (L., 1758), 15.6mm; 16. *Bistolida stolidia crossei* (Marie, 1869), 24.9mm; 17. *Erronea erronea* (L., 1758), 25.3mm; 18. *Erosaria beckii* (Gaskoin, 1836), 11.4mm; 19. *E. labrolineata* (Gaskoin, 1849), 16.8mm; 20. *E. helvola* (L., 1758), 14.4mm; 21. *Bistolida kieneri depriesteri* (Schilder, 1933), 13.8mm; 22. *Palmadusta asellus* (L., 1758), 21.2mm; 23. *Staphylaea staphylaea consobrina* (Garrett, 1879), 13.6mm; 24. *Melicerona listeri* (Gray, 1824), 16.2mm. Also collected in this locality but not shown: *tigris*, *mappa panerythra*, *arabica*, *mauritianae*, *teres*, *moneta*, *erosa*, *aurantium*, *annulus*, *humphreysi*, *ziczac*.



(Above) *Cypraea tigris* L., 1758, forages on the wreck of a WWII American transport boat off New Georgia, where shipwrecks and plane wrecks lie within reach of snorkelers. Surprisingly, there is little organized SCUBA diving and not much effort to attract foreign visitors to these sites.

The Solomons has a turbulent history. Polynesians started arriving here 800 years ago by canoe; they were probably disappointed to find the major islands already settled by Melanesian peoples. The racial tensions between Melanesians and Polynesians continue to this day, and disputes over land ownership have never been forgotten. I came to know many Melanesian people in Marau, who regard themselves as the 'original' settlers of Guadalcanal. Their lingering resentment towards other settlers is still apparent. Attempts by Europeans (mainly the British) to 'colonize' the Solomons eventually put an end to 'head-hunting,' yet neither the natives nor the British can have felt satisfied with the subsequent developments. In one extreme example from 1927, some Kwaio tribes people of Malaita Island killed a tax collector and his armed guards; the reaction of the self-styled 'colonialists' was to send a punitive expedition (including a battleship!) that killed or captured hundreds of Kwaio, desecrated and destroyed sacred tribal sites, and set up a situation that foments bad feelings that last even today. The tribes people can be forgiven for their suspicions about European-style 'diplomacy.'

The Solomons gained independence in 1978, but the 21st Century started with five years of what is best described as civil war. Territorial disputes, particularly on Guadalcanal, led to hundreds of deaths, tens of thousands of refugees, a bankrupt government, and economic devastation. In 2001 the government, such as it was, asked for outside help to quell the violence. Shell collecting was simply not a priority. Australian shell collectors who used to visit were now warned not to go. With no visitors buying shells, the Solomon Islanders just had no reason to search for the 'collectible' species.



(Above) The sandy bottom of Marau Sound is a fertile hunting ground for miters. 1. *Vexillum rubrocostatum* Habe & Kosuge, 1966, 27.8 and 27.9mm; 2. *V. antonellii* (Dohrn, 1861), 23.8mm; 3. *V. coronatum* (Helbling, 1779), 21.1mm; 4. *V. semifasciatum* (Lamarck, 1811), 22.3mm; 5. *V. vulpecula* (L., 1758), 43.9 and 45.1mm (5a seems to be an unusual localized color form); 6. *Imbricaria conularis* (Lamarck, 1811), 20.3mm; 7. *Mitra pellisserpentis* Reeve, 1844, 24.6mm; 8. *Pterygia crenulata* (Gmelin, 1791), an unusually inflated specimen (31.0mm).

(Below) Cones are so characteristic of the Solomons that their current series of definitive postage stamps features only cones – 14 different species on the 14 denominations. Although the Solomons has few true endemic *Conus*, several quite desirable species are easier to obtain here than elsewhere. These specimens are from Marau Sound: 1. *Conus crocatus* Lamarck, 1810, 25.8mm; 2. *C. floccatus* Sowerby, 1841, 43.5mm (a marvelously variable species); 3. *C. striolatus* Kiener, 1845, 29.5mm; 4. *C. legatus* Lamarck, 1810, 24.8 and 25.2mm; and 5. an unusual form of *C. consors anceps* A. Adams, 1854, 50.5mm. *Conus gloriamaris* Chemnitz, 1777, is found close to Honiara, but in very difficult conditions for divers: the black sand bottom is stirred up by river run-off and the area is all-too-popular with saltwater crocodiles!





(Above) Turning a rock at low tide in Roviana Lagoon in the Solomons' Western Province reveals a cluster of *Mitra tabanula* Lamarck, 1811. After cleaning, the shell's beautiful sculpture is revealed (15.4mm specimen, right).



(Above) In my quest for 'bana' (seashells, in the Roviana language), I turned an intertidal rock and found this *Mauritia arabica* (L., 1758) guarding its eggs. Naturally, the rock was immediately put back after one photo.



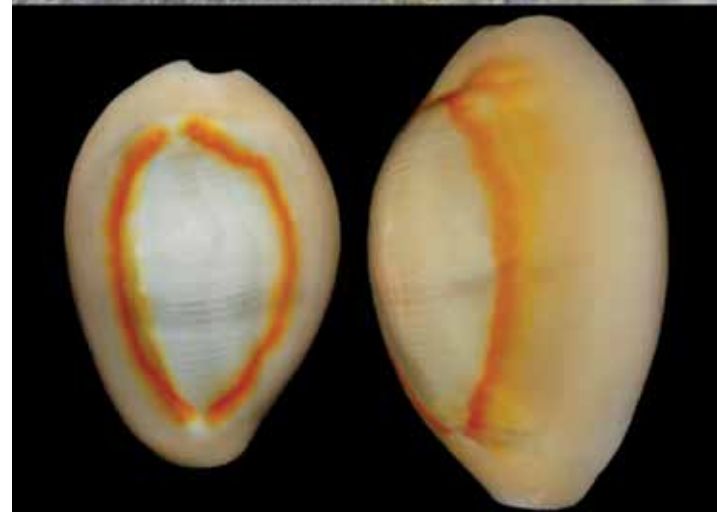
(Above) This 75mm specimen of *Cymatium pileare* (L., 1758) is almost invisible against its environment in Roviana Lagoon (left picture). On the right is the same shell, turned to show its aperture.



(Below) The cleaned *Monetaria annulus* (L., 1758) were collected on an American wreck in Roviana Lagoon. Both show unusually intense orange coloration. The live specimen (upper picture) is exposed on a reef at low tide.



(Above) The shallow waters around New Georgia Island in the Western Province are a haven for opisthobranchs. The species I saw most commonly was *Chelidonura varians* Eliot, 1903 (family Aglajidae), which is active on sandy bottoms during the day. This species actually has an internal shell.





(Facing page) These ‘rusty’ *Mauritia arabica* (43.7–57.7mm) were collected in a few feet of water, on an American shipwreck in Roviana Lagoon. This wreck actually breaks the surface at the lowest tides. The rust coloration is very pronounced in some specimens and a few are ‘over-glazed’ so as to appear almost grey. The shell at the upper left (35.5mm) is a normally colored reef specimen for comparison. Just a few miles away is the small island where a certain Lieutenant John F. Kennedy swam ashore in 1943, after the sinking of his PT boat.

DID YOU KNOW?

Swimmers today owe thanks to a young Solomon Islander named Alick Wickham. Alick used a special swimming stroke he had developed in Roviana Lagoon when he visited Australia in 1920. The top swimmers were impressed and started to copy it. We now call his swimming stroke ‘front crawl’.

(Below) Sycamore Bea from Munda examines a truly ‘gigas’ specimen of *Tridacna* in Roviana Lagoon. The bright blue mantle of this same individual is shown on the back cover of the September 2010 *American Conchologist*. This area was particularly badly hit by a tsunami on April 2, 2007, caused by a powerful undersea earthquake. It was reassuring to see the variety of healthy marine life 3½ years later.



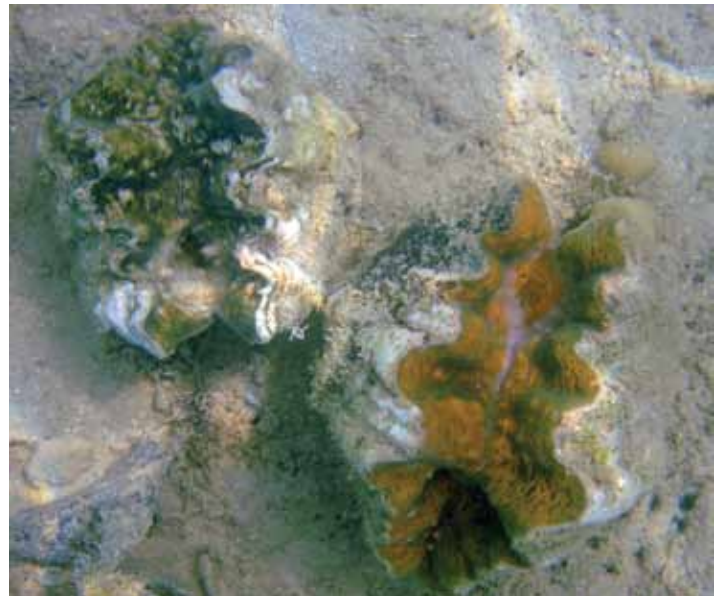
Tridacna gigas (L., 1758) has traditionally played an important role in the life of the Solomon Islanders, and continues to today. Known locally as ‘hio,’ it is an important source of protein for the Roviana people. The shells are often carved, most notably into ‘shell money.’ Discarded shells litter the seashore and I saw a children’s ‘play-pit’ filled with *Tridacna* shells.

Visitors to the Solomons should be wary of the products made from *Tridacna* that are offered as souvenirs. Tridacnidae are protected by CITES and there would be heavy penalties for attempting to export these shells without proper documentation. Any artifacts containing shell product whatsoever must be declared and inspected on arrival back in Australia.



(Above) A young *Tridacna* lodges in the reef near Kiambe Island in Roviana Lagoon. All the recognized *Tridacna* species are found in the Solomons, and the living animals can be difficult to identify. The clams incorporate living algae in their mantle tissue (endosymbiosis), providing nourishment through photosynthesis. The algae can be clearly seen in this picture.

(Below) These *Tridacna gigas* are part of a ‘family group,’ sitting beside the shell shown on the left. At 300–350mm, they are dwarfed by the larger specimen. Even in such a discrete group, there is considerable variation in mantle color.





(Above) The Roviana people make 'bakiha' from *Tridacna gigas* shells, which is used as a form of money. The non-commercialized societies in the Solomons started using currency only recently and the tradition of shell money remains strong. Special grinding tools are used to carve the massive shells, a time-consuming labor, and the *bakiha* shown here would be the prize possession of a Solomon Island family. The rings can be worn on the wrist or hung round the neck.



(Above) The Marau people of southern Guadalcanal make a completely different form of shell money, called 'hikahika.' It is still sometimes used to 'buy' a bride, or to buy property. As westerners might say, "time is money," and it is the time required to create these pieces that translates into their value. *Oliva carneola* (Gmelin, 1791) are painstakingly ground down, one at a time, to form small 'cylinders' that can be strung on a cord. The 'spacers' are made from turtle shell. Also shown here are four forms of *O. carneola* collected in Marau Sound, including an albino.



(Above) Mangrove whelks or mud creepers (*Terebralia palustris* L., 1767) are stacked in heaps in the Honiara market. The price is charged for one heap, but they freely redistribute themselves between heaps - to the frustration of the vendor! Despite the awareness of mollusks as a food source, there is no tradition here of collecting shells specifically for conchologists.

(Below) *Nassarius horridus* Dunker, 1847 exhibits surprising color variation in this selection from Roviana Lagoon.



(Below) The women of New Georgia collect *Nassarius camelus* von Martens, 1897, which are exported to New Britain. This curious little species, rarely more than 8mm, is then used as money by the indigenous Tolai peoples.





(Above) Besides the abundant *Oliva carneola*, the Solomons boasts a variety of beautiful Olividae. On this trip I collected: 1. three color forms of *O. longispira* Bridgman, 1906, 23–24mm (now considered a full species); 2. *O. amethystina* (Röding, 1798) (showing huge size variation: 22–43mm); 3. *O. reticulata* (Röding, 1798) (3a is form *azona* Dautzenberg, 1927, 43mm; 3b is form *zigzag* Perry, 1811, 46mm; 3c is an unusually dark specimen, 39mm); 4. *O. tessellata* Lamarck, 1811, 22mm; 5. *O. caerulea* (Röding, 1798), 41 and 42mm (showing color variation); and 6. *O. miniacea lamberti* Jousseaume, 1884, 48 and 52mm. All are shown to the same scale.

My Solomon Island travels took me from Guadalcanal to the town of Munda in the Western Province. Munda has a population of barely 4000, and a paved runway suitable for wide-bodied jets. This anomaly is because Munda was a center for military activity during WWII. Indeed, Munda experienced some of the fiercest fighting in the Pacific, in 1942/3, largely because its airfield offered the Japanese a staging point to attack ‘Henderson Field,’ the country’s principal airfield. Today, much of the surrounding lagoon area is a designated “Marine Protected Area,” where no shell collecting or fishing is allowed. The rusting remnants of the fighting are easy to find, both in the water and on land. Much military equipment was scuttled or unceremoniously ‘dumped’ in these waters, unwittingly providing many artificial reefs for marine life.

The Solomons remains a relatively undeveloped country. For the shell collector, this means that boats capable of pulling



(Above) The seaweed *Kappaphycus alvarezii* lays on large outdoor tables on an island in Marau Sound. Some Solomon Islanders have recently started cultivating seaweed, which is sold in China for use in foods, pharmaceuticals, and traditional medicines. Aquaculture is a promising new strategy for these islanders.

a dredge are hard to come by and there are few compressors for SCUBA gas. Good shells have certainly been obtained by dredging here in the past, but the so-called ‘tensions’ of the early 2000s caused a loss of interest. Other drawbacks for collectors are the surprisingly heavy seas (even in ‘sheltered’ lagoons), cyclones, human-eating sharks, and – of course – copious saltwater crocodiles. There are barely 20 miles of paved roads in the entire country, so water transport and ‘bushwhacking’ are essential for exploring the Solomons.

Notwithstanding the devastating 2007 tsunami and despite the ethnic tensions, the Solomons retains much of its allure for shell collectors. Based on my direct observations, the native islanders show respect for their marine environment. They recognize the importance of human interaction with marine ecosystems and willingly work with the authorities to preserve what is unique.

A serious book devoted to Solomon Island seashells is long overdue. The landsnails of the Solomons are now receiving the scholarly attention of André Delsaerdt, with volume 1 of “Land Snails on the Solomon Islands” published by L’Informatore Piceno in 2010 and volume 2 expected this year. In a future article, I shall illustrate my own experiences collecting landsnails in the Solomons.

I wish to thank the villagers of Suhu, Vutu, Hautahe, and Simeruka, the people of Munda and its neighboring villages, and the Peter Joseph WWII Museum near Kiapatu. I also thank Markus Huber, Felix Lorenz, Jean-Claude Martin, Giancarlo Paganelli, and Dennis Sargent for their valued advice.

All photographs appear courtesy of Simon’s Specimen Shells Ltd (www.simons-specimen-shells.com).

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The 2010 Philadelphia Shell Show

Paul Callomon

The 28th Philadelphia Shell Show was held on Columbus Day weekend and was a great success by any measure. It was the largest yet, with over five hundred feet of exhibits, and the quality of the displays reached new levels. One of the hallmarks of the Philly show is the balance of art and science, and this year saw strong entries from both sides. The scientific displays tackled many different themes and some visitors were surprised to learn that this was not a professional museum exhibit but an amateur show!



Guests at the supper enjoyed a cocktail hour in the Academy's newly refurbished main lobby before moving into Dinosaur Hall to eat. Photo by Mike Gage.



The Academy's Department of Malacology fielded several exhibits, including this one on the Pearly Nautilus. Photo by Paul Callomon.

The main science awards were:

- R. T. Abbott Award: Ed Shuller & Jeanette Tysor, "Mystery of the Migrating Mollusks"
- Robert B. Fish Award: Michael Gage, "Shells of Hawaii"
- Leonard Hill Award: Tom Grace, "*Maurea* of New Zealand"
- DuPont Trophy: John & Darlene Schrecke, "True Conchs of the World"
- COA Award: Karen VanderVen, "Volutes of the Tropical Western Hemisphere"
- Masters Award: Gene Everson, "Seashells of the New Millennium"



Spectacular Sailor's Valentines continue to be a major feature of the Philadelphia Show.

On the art side, great new work was displayed in several categories including photography, shell flowers, shell pictures, and mirrors.

The principal art awards were:

- Best Single Sailor's Valentine (non-professional): Beverly Hartzell, "Objets Trouvés"
- Best in Show – Traditional Single Sailor's Valentine: Gerda Reid, "Dancing Flowers"
- Best in Show – Contemporary Single Sailor's Valentine: David Rhyne, "Springtime"
- Best in Show – Objets Trouvés Single Sailor's Valentine: Wendy Marshall, "Fruits of the Sea"
- Best in Show – Double Sailor's Valentine: Jane Santini, "May You Walk Gently"
- Best Artistic Exhibit (excluding Valentines, non-professional): Lisa MacDonald, "Tidal Pool"
- Best Artistic Exhibit (excluding Valentines, professional): Constance Marshall Miller, "Scratchboard Drawing"
- Best Shell of Show: Patricia Whitaker, *Angaria sphaerula*
- Best Self-collected Shell of Show: Gene Everson, *Conus theodori*
- Judges' Special Awards (Scientific): Nick & Betty Ruggeri, "The Clams that Nobody Loves" and Robert and Happy Robertson, "Gastropod Coiling"
- Judges' special awards (Artistic): Lindsey Rafter, "Flowers and Fish"; Constance Marshall Miller, "Snowy Egret"; Carolyn Mirkil, "Flowers in Vase" and Michele Gilmartin, "Beautiful Bounty".

The Preview Party on Friday evening was a huge success with over 150 guests browsing the bourse and viewing the show. The Phillies were in the playoffs that night (third year running), which might have represented a dilemma for some, but happily a live feed to the game was laid on! The evening raised \$30,000 for the Center for Molluscan Studies and the Academy's Department of Malacology.

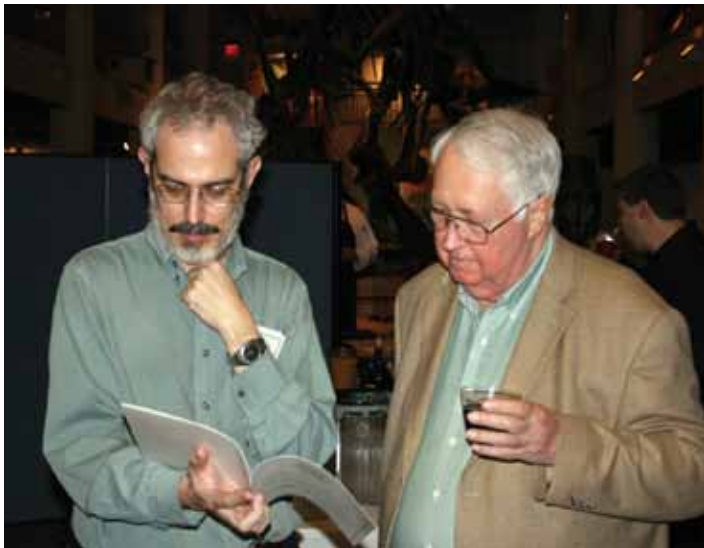


(Above) The venue was the Academy's purpose-built Changing Exhibits hall. Photo by Paul Callomon.



(Above) Dealers at the show included (from left) (top row) Brian Hayes, Don Pisor, Don Dan and Rich Goldberg (middle row) Bob and Betty Lipe, Bev, Al and Neal Deynzer (bottom row) Rich Eisenman, Rick Negus, Sue Hobbs and Phil Dietz

(Below) The bourse was the center of attention for many, with a fabulous display of riches. Photo by Michael Long.



(Above) Gary Rosenberg and Bill Lyons try to decide whether they agree with what Pilsbry is saying. Photo by Mike Gage.

(Below) Academy Curator Emeritus Robert Robertson with wife Happy recalls all the Philly Shows he's seen. Robert was the only person present to have actually heard Henry Pilsbry in person! Photo by Paul Callomon.



For 2011, the show moves one week earlier. Setup, judging and the Preview Party will be on Friday, September 30, and the show will be open to the public on Saturday and Sunday, October 1 and 2. Watch the club's web site www.phillyshellclub.org for updates, entry forms and news of the show!

More pictures of the 2010 show can be found at: <http://fotografic.net/ShellShowRough/index.html> and Randy Allamand has posted some at <http://www.facebook.com/album.php?aid=2092340&id=1482615077&l=327b4f902d>



2010 PHILADELPHIA SHELL SHOW

Supper guest speaker

Dr. Henry Augustus Pilsbry

On The History of Zoological Nomenclature

HENRY AUGUSTUS PILSBRY (1862-1957) ranks among the most productive malacologists of all time, and described more new taxa than anyone else. He spent his entire professional career at the Academy of Natural Sciences in Philadelphia, starting in 1887 as an assistant to the head of the Conchological Section, George W. Tryon. Besides his work with mollusks, Pilsbry published on Crustacea and was an acknowledged authority on barnacles. During the first four decades of his career he undertook simultaneously to continue the publication of Tryon's vast Manual of Conchology, while founding and serving the journal *Nautilus* in the roles of editor, publisher and major contributor and producing several books, including the *Catalogue of the Marine Mollusks of Japan* (1895). Pilsbry became Curator of Mollusks and Professor of Malacology, and continued to research and publish until days before his death in 1957. Among his best known works is the four-volume *Land Mollusca of North America* (1939-48), which remains in general use today.

Pilsbry gave lectures on Malacology at the Academy, and at least one of them was preserved using a Wire Recorder. This now vanished technology transferred sound by a magnetic analog process onto a steel wire as thin as a hair. The wire ran past the recording head at a rate of two feet per second, which meant that a length of roughly 1.4 miles was required for a one-hour recording. So fine was the wire, however, that even this length would fit onto a drum six inches in diameter. Wire recorders were popular for home recording in the late 1940s and early 1950s but were displaced by audio tape, which offered higher fidelity and stereo capability. The durable, fire-proof steel medium nevertheless lived on into the 1970s in aviation flight recorders.

The sound quality of the Pilsbry wire is remarkably good, given its age. He occasionally strayed away from the microphone and thus became less audible, but his clear delivery and an impressive command of English make him very easy to comprehend. A transcript of the full talk follows. Where a passage is marked [...], it is not clear enough to determine the words. Otherwise, the punctuation used here is deduced from Pilsbry's grammar. There is a brief introduction at the beginning of the recording, but who the female speaker is has not been determined.

In a notable passage, Pilsbry asserts that the fossil record shows the evolution of species to occur in steps, rather than as a continuous process. This notion would later form the basis of the theory of "punctuated equilibrium" advanced by Niles Eldredge and Stephen Jay Gould in 1972, building on earlier work by Ernst Mayr at Harvard and I. Michael Lerner at Berkeley. Pilsbry had clearly reached similar conclusions somewhat earlier.

Acknowledgments

Assistance with arranging the digitization of the original wire was provided by Clare Flemming of the Academy Archives, where the wire and another like it are now stored. Dr. Gary Rosenberg kindly reviewed the transcription and elucidated many of the ambiguous passages and obscure references. Digitization was by Avocado Productions of Broomfield, CO. Post-editing, initial transcription and preparation of this publication were by Paul Callomon.



(Above) Henry Augustus Pilsbry and staff (early to mid 1900s).

(Below) The spool of wire used to record Dr. Pilsbry's talk.



[Introduction]

...define how a name should be given to a group of animals or plants, and there have been many changes in the past. Zoological rules and botanical rules differ still on many points, as you will see this morning. However, I think in general the aims of all rules of nomenclature are to attain a set of – shall we call them “laws” – by which the fixity of a name is asserted; also, to have the rules simple and clear and to cause as few upsets in already common usage as possible. I think those might be summed up as the main aims of the people formulating the rules of nomenclature. Now this morning, Doctor Pilsbry, who is Curator of Mollusks at the Academy and one of the foremost taxonomists of the world, is going to talk to us concerning zoological nomenclature.



IT IS OF COURSE OBVIOUS that work in zoology and botany can be carried on only with a systematic plan of nomenclature. This has to be simple enough to be readily understood, and sufficiently impartial to be a – to obtain international use. Now every language has, of course, its own nomenclature of animals and plants, adapted to everyday needs; and this nomenclature is primarily uninomial. When a more specific characterization is desired, it becomes binomial. For instance, we have the general idea of “boat,” and if you wish to be more specific you say “steam boat” or “sail boat” or “row boat.” It was exactly this binomial system that Linnaeus adopted about two hundred years ago for the scientific nomenclature of plants and animals. Latin was then the common language of all learned men, and being a dead language it was adapted for international use without prejudice. Now the idea of a binomial nomenclature wasn’t wholly original with Linnaeus; it did not come from his mind as Minerva sprang from the brain of Jove. It was a gradual – there was a gradual leading up to it in the works of the natural-ists previous to him, and it may be well to give a – some brief account of the history of nomenclature scientifically. Now, prior to Linnaeus, there was no uniformity. Each writer had his own system, and he designated species of animals or plants by the plan which he thought was best without definite reference to what other people had done. The usual way was to – instead of a name for a species, to give a descriptive phrase. Now, for instance, in Sir Hans Sloane’s History of Jamaica, published in 1725, a book which I have here, you will find the different species of animals and plants are designated by a descriptive phrase. For instance, where I happened to open that book yesterday, Sloane was describing star-fish, and his first species he designated as [...] series of starfish he called *Stella marina minor echinata purpurea*; and the second species was *Stella marina maxima articulatus cinerea*.¹ Well, this was rather a clumsy way; to have such a long phrase every time you wish to speak about a certain starfish, which he later in his work described fully and illustrated.

Now, this was the general rule. The authors of that period used a more or less lengthy descriptive phrase to designate the different species; and while most of them had this phrase in Latin, a good many used their native tongue: Dutch, French and – so that every species that was at all well known came to have half-a-dozen or more different names in the works of different writers. But the idea of more definite names was being considered by authors of the early part of the 1700s, and they had the idea of grouping together closely related species under what was – they called the “genus.” Now “genus” of course is a Latin word meaning the descendants of a common stock, and that is just what they considered the species of one genus to be, the descendants of one common stock, and

that is what we still – that is still the idea of a genus. In the early works of Linnaeus and the works of Tournefort in Botany, and of Adanson and many others in Zoology, this idea of a genus was – was being brought up. They still used a polynomial “many-word” description to designate the species, or in the case of Adanson he used a single word for each species, but it was not a Latin word; for instance, “Mytilus” for the oysters, but his half-a-dozen different species were simply designated by vernacular words, not by Latin terms. But at the same time, many of the common genera were well characterized by these authors, and before the middle of the 1700s, and were well defined; so that many of the names which we date as from Linnaeus really go back to these all-but-forgotten pre-Linnaean authors. Many of their genera were simply adopted by Linnaeus and transferred into his system.

Now it was the great merit of Linnaeus that he substituted for this chaos of polynomial names for species a single word for the species. He carried out for species the same idea that had been growing up for genera, and for instance, for *Stella marina minor echinata* Linnaeus substituted the word *Asterias* for the *Stella marina*, and in place of the string of adjectives he selected one adjective for the specific name; so that this starfish, which had been designated by a phrase as long as a line across a page at least, was succinctly made into a two-word name, *Asterias echinata*. Now this – together with this reform in specific names, which was almost entirely Linnaeus’s own conception, he formulated rules for giving names to animals and plants; and before him, there had been no recognition of any rules – every author was a law unto himself and made his own rules. There was also another great advantage in Linnaeus’s work, and that was that he made it comprehensive by covering all of the animals and plants in the then-known world – known in the world at that time. This he published in – as far as animals are concerned – in a work called *Systema Naturae* and the majority of the number of animals that were known at that – in 1758 are the size of this volume, which contains succinct descriptions – names and succinct descriptions – of all of the then-known animals. There are about, well, six to ten on a page, and they can all be contained in a volume of very moderate size. However, he did not pretend in this work to give full descriptions. He gives a succinct description, and then references to the authors who preceded him who have given full descriptions of the different animals; and it may be said that many of the species of Linnaeus were based solely upon these other authors – he had never seen the animals at all. He made a compilation and gave a binomial name to the species which had been defined by many other authors; and it is by reference to the works of these older authors that we are

¹ Sloane’s first two species actually are *Stella marina minor echinata purpurea* and *Stella marina minor cinerea laevis*. The third is *Stella marina maxima articulata*. By mixing up the second and third ones, Pilsbry inadvertently illustrates his own point regard-ing the difficulty with such names.

able to identify many of the Linnaean species, as his descriptions are so very brief. But it was the fact that he gathered the whole known fauna in one work that aided a great deal in having a – in giving it universal currency. It was a very great convenience for people who had gone from one another of the old books and finding a different name for the same animal in each one to be able to find one definite name in the works of Linnaeus; no matter what order it was: insects, starfish, anything, why, you could find it. And while Linnaeus was primarily a botanist, he had a broad enough outlook to make a very good zoologist also, for that time. But those two qualities of Linnaeus's work: the – having every animal with a name of two terms, a binomial name, and having a regulation that a name once properly given could not be changed; that was one of the points which gave the Linnaean system a general use, over all other zoological systems of names. Now of course the Linnaean names – or regulations as to names – have been added, practically all of his provisions have been retained but various additional provisions have been made for the use of generic names [...] and all scientific names.

Now in the case of genera, names of genera are always a single word, and a substantive, preferably, which must be in the nominative and singular; and it is always written with a capital. This is a rule that you often see transgressed in newspapers and other places that write a generic name with a small letter. Also the name must be either Latin or Latin in form. For instance, if you have a name like “Hawaii” in Latin [...] ending in –ia [...]; a genus – if you wanted to name a genus for Hawaii [...] *Hawaiiia*; so that any barbarous or non-Latin name has to be made into a Latin form to be acceptable as a generic name. A great many generic names are taken from the Greek, and this must be translated in – transliterated into Latin; and there are one or two points in which it's often – very frequently incorrectly transliterated; for instance, in Greek, “*kappa*” should be transliterated “C”, not “K”... but often it has been “K,” as in the genus *Akera*, that should have been written with a “C,” but while we have these rules for transliteration when a name has been transliterated wrong in a [...] allowed to stand. We don't admit [...], or at least most authorities don't admit emendations, and in fact no corrections are admitted in Zoology unless they are either obviously typographical or clerical errors. Any other – that is carried to rather an absurd extreme; for instance, in the case of the species named after the state of Pennsylvania, some of the authors who named them didn't study correctly; they used only one “n” instead of two; and then another author used an “i” instead of “y” in “*Sylvania*,” but those errors are still perpetuated in our present zoology, although it seems that there would be very little against the idea of making all of the names uniform.

Now generic names usually express some quality of the animal described, for instance, the generic name *Rhinoceros*; but – and – but they do not necessarily have a zoological meaning. Some are named after an eminent zoologist, like *Lamarckia*, and others have a geographic connotation, while still other generic names are senseless or anagrams; for instance, in Möller, we have a name – we have two slugs – our common garden slug is *Limax*, but another genus of slugs was named *Milax*, a separate anagram of *Limax*. So, people use their imaginations and their humor in generic names more or less. Now to the – I should say that of course [...]

duplication of generic names occurs in the Animal Kingdom. Now it frequently happens that there has been duplication; for instance, a man working on a certain group in France and another in California might – working on different faunas, might very easily use the same name for different animals. Where this occurs, of course priority rules. The first one – the first author's name stands.

Now to come to specific names. A specific name is primarily an adjective, but it can also be a noun in apposition with the generic name, or it can be a personal name in the genitive form, or – and – or a geographic name, which is generally used in adjective form, like *floridanus* or *canadensis*. Now when a – when used in – when a species is named after some person, and used in the genitive case, it will – in the masculine gender it will be, for instance, you add -i to the entire name; [...]*jei*, or if it was named after a woman, it will be –ae; for instance, there is a whale barnacle which was named for Queen Victoria “*reginae*.” And if you're naming it after several persons or several things, why, you use the genitive of the plural. For instance, there's another whale barnacle which is named *Coronula balaenorum*, the *Coronula* of whales.²

Now, as in the genera, no two species of one genus can bear the same name. When by accident they do, the later of the two names has to be changed. Now in the [...] name, when a species is described in one genus and is later transferred to another. Now let's see; there [...]; however, in writing specific names, we almost always append to the specific name the name of the authority who first named this species. That was not in the early times – Linnaean times – considered necessary. Now it's necessary for various things. One is because sometimes two authors have given the same name to different species, and in other cases; and always, having the authority after the specific name gives you a clue to where you have to look to find the original description, and sometimes it's a very valuable thing to have such a clue. If you have “Lam.” for “Lamarck”, after a description, you know you have to look in the works of Lamarck; and so the authority is a valuable part of the specific name, although it's not an absolutely necessary part.

Well now, when a species is being used in the same genus in which the author originally placed it, the authority is simply written without any punctuation, as I've written *Helix albolabris* on the board. But if *albolabris* has now been changed to a different genus... you recognize a great many genera in the dismemberment of the old genus *Helix* of a hundred years ago so if we make that *Triodopsis albolabris* then we indicate that the genus has been changed by placing parentheses around the name of the authority; so let me see, by *Triodopsis albolabris* (Say), you know that you have to look in the writings of Say to find the original description of that species, but also you will find it under some other generic name. This use of the parenthesis, while it is not universal, is very general at the present time.

Now I might also allude to two terms that are commonly used: “homonym” and “synonym.” A homonym is the same word given to two different objects; and synonyms are different names given to one and the same object. Now we have many examples of both of these in zoological nomenclature, and most of them are cases which require correction.

Now another thing which is of great importance in modern nomenclatorial discussions is the matter of types. Now types –

² This is probably an error for *Coronula balaenaris* Darwin, 1841 (now *C. darwini*).

the type of a species is that specimen upon which – from which the original account of the species was drawn. That is plain enough; and the type of a genus – which is also called the “genotype” or – that word’s been used in another connection³, some people call it “generotype” – that is not so simple. Linnaeus and the early authors didn’t recognize any types of genera. The – it is – they simply gave a definition of the genus and let it go at that. Now of course we have to conclude that a species is simply objective; and a species is a real thing, established in nature and not a subjective idea of our own, and while it is sometimes difficult to tell species apart, and while you may be wrong in considering a certain difference to indicate a different species, that doesn’t alter the fact that a species is any interbreeding population of similar animals. And in considering that all animals [...] the process of evolution, it might be supposed that intermediate forms of these species would be as common as distinct species are, or even commoner; but that is not the case. [...] evolution apparently is not a continuous process but it’s a process of steps. Now if you take a certain species in the Lower Miocene of our southern states, why you can often trace that species up to the Middle Miocene and the Pliocene and then into the Recent. Now in each of those stages, the specimens will be different; you’ll see that they’re very closely related, but they’re different. They’re [...] markers; they’re steps, they do not intergrade. The intergrading stages must last a very short time, or else there are none; that is, evolution flows more or less by steps. That is forced upon anyone who studies this – the fossils of the later formations of our southern states, where we have a very nearly continuous series.

Well, now, in genera we have another entirely different state of affairs...I think this is a drastically – it’s a subjective conception. It has no necessary limits, and a genus at the time of Linnaeus covered very much more divergent forms than it does today. Genera have been constantly changing, as new – many new species have been added, the old subgenera subdivided, and also as new characters and the value of characters have been more justly estimated. For instance, Linnaeus had a genus which included all the air-breathing snails. If we accept the genus with his limits, why it would now have about ten thousand species, which would be... and quite...

All of the old genera have been subdivided time and again. Now when a genus is subdivided, which part of it retains the original generic name? This difficulty arose – first became acute in Lamarck’s time, half a century after the foundation of the Linnaean system, because then there was a very great increase of species and more appreciation of their differences, and the comprehensive genera of Linnaeus were being broken up. Now Lamarck issued, in 1799, a work on molluscan names; and in that he gives a definition of the genus, and he calls it by the name of a single species. He says: “selected a single species of each genus in order to make myself better understood.” That is among the earliest statements I have found of a type designation. The word “type” was used at first in the – in zoology, as far as I know, by a French author, Denys de Montfort, in 1810. Under each of his genera, Montfort said: “spe-

cies serving as type of the genus: so-and-so.”

Now as a great many genera have been described without designation of type and subsequent authors have often differed in the names to be applied to the different types of a group, the International Commission on Zoological Nomenclature has formulated rules for these decisions. A genus with one species of course takes that species as type; a genus with several species – if none of those species is – if one of the species has been designated by the author as type, of course that is taken as type. If one of the species – if the genus bears the same name as one of the species, why that species is considered type by tautonymy. For instance, Linnaeus did put the frog and toad in the same genus, *Rana*. He called the toad *Rana bufo*. Later, when the toads were considered to form a separate genus, the genus was named *Bufo*. Well, that automatically took *Rana bufo* as its type, by tautonymy. In other cases, [...] generotype is fixed by the first reviser of the genus. If some person revises an old composite genus and proposes to split off part of it for new genera, why he nominates a type for the old genus if it has not – doesn’t already have one; and once designated, that type cannot be changed by any subsequent author.

Now in the case of divisions of a species – now in recent years, species have been divided into subspecies, the same rules applying [...] for making species names, the restriction of them applies to subspecies. Some authors go even further in the division of species and subspecies and divide the subspecies into forma or varieties; but this has not yet been incorporated into the Code of Nomenclature.

Now I might mention the principal stages in the formation of the nomenclature which we use today. Of course, we have Linnaeus, who first formed a [...] set of rules, in 1751, in his *Philosophia Botanica*. The British Association for the Advancement of Science compiled a set of rules [...] at that time, in 1855, and in 1877 the American Association published, in their proceedings, rules for scientific nomenclature. These were compiled by W. H. Dall⁴, who was in – at the third Zoological Congress – International Zoological Congress, held at Leiden in 1895. A committee was appointed to draft rules of zoological nomenclature, and that – the first [...] was in 1901. It was not – the rules were not published in the English language and not available in America until 1926, and they were published in the Proceedings of the Biological Society of Washington. The commission on nomenclature appointed at the International Zoological Congress consists of fifteen members, these selected from the principal countries of Europe and America. For a long time, the secretary of the commission was Dr Stiles in Washington, who was a great expert on nomenclatorial matters. Now it is – now the headquarters of the Commission are in London. The international rules are closely followed by zoologists all over the world, but cases arise which are not fully explained in the – are not explicitly explained in the code of rules. The fact is, of course, that any code of laws requires interpretation by courts, and that is so in the case of nomenclature, which are especially involved. The International Commission, therefore, undertook to supply opinions on any questions which were in doubt

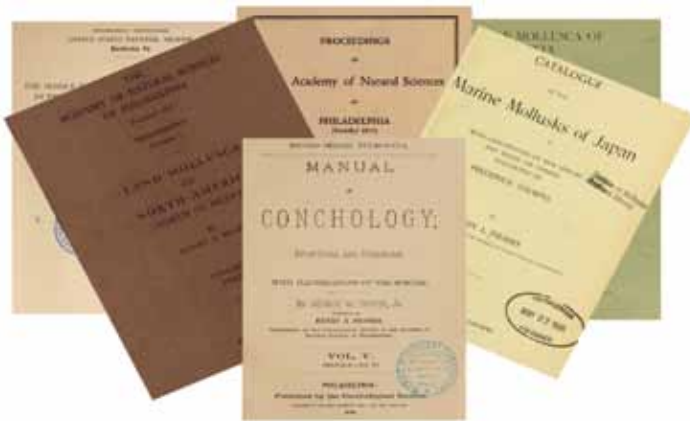
³Genotype indeed referred to something else by the time of this talk. It is, of course, the genetic makeup of a cell, organism, or individual, the full hereditary information, even if not expressed in the phenotype (observable characteristics).

⁴A long-standing question is here answered. Pilsbry, who knew Dall for more than 40 years, pronounces his name to rhyme with “pal”, not “hall.”

which were submitted to it. There are now about 150 Opinions,⁵ and while the rules – the code of rules, though they occupy many pages, why there are several hundred cases which need interpretations of the rules as applied to special cases. For instance [...] the case of generic names of different gender. Now in specific names, of course the name has to agree in gender with the genus, but in the generic name the gender is not subject to change, but the British zoologists generally consider names that differed only in gender as being homonymous – homonyms; for instance, *Conulina* and *Conulinus* they consider the same name, and a number of those cases related [...] the Commission gave an opinion in which it decided that names that differed only in gender were different words; so that both *Conulina* and *Conulinus*⁶ can be used for generic names. I think this will be a perfectly satisfactory decision because we have the same thing in common language; names like “Louis” and “Louise” are perfectly distinguishable and they were [...] different rules.

⁵ICZN Opinion 150 was published in 1943, so this talk likely dates from after that.

⁶ICZN Opinion 86 of 1925



(Above) A few of the 3,000+ scientific papers by Pilsbry. Most concerned malacology and were published by the Academy of Natural Sciences, but many shorter papers were published in *The Nautilus*. Pilsbry performed extensive, worldwide fieldwork and published on a wide variety of subjects.

(Below) The Academy of Natural Sciences of Philadelphia. Founded in 1812, this is the oldest natural science research institution and museum in the New World and presently contains more than 17 million biological specimens.



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John Allen Baker (1920-2011)

of Merritt Island, Florida, was a retired USAF Chief Master Sergeant with a love for people, music, and sea shells. Alan Gettleman wrote of John on Conch-L:



“John was one of the early members of COA, since at least 1973. There was no kinder or gentler person than he. He was always a gentleman, a kind and soft-spoken man who loved to laugh. John, true to his last name, was a great baker and his carrot cake was legendary. His parents were from Eleuthera, Bahamas, which is where he learned to love shells.

John was a past president of the Astronaut Trail Shell Club, and was a COA convention co-chair for the COA convention in Melbourne, Florida in 1990. He was always a vigorous supporter of COA, being our club’s long time COA rep. I believe he was once a Trustee of the COA. At the St. Louis COA convention, when our St. Louis members wanted to hear the presentations, John offered to man the reception booth to allow them to attend. Homer Rhode of Englewood tells the story that he and John were roommates at a COA and both were bidding on the same land shell at the COA oral auction. After several raises of the bid John yelled across the room to Homer: “Homer, stop bidding, I’m buying the shell for you!” That story expresses well his generosity.

John was not active in shelling over the past decade and was in declining health. John Baker has the wonderful legacy that there are only good things to say of him and you were happy whenever you saw him. God bless you, John, and good shelling.”

Carol Belle Stein (1937-2010)

of Johnstown, Ohio, was well-known to collectors and others interested in freshwater snails. Carol received her MS and PhD degrees from Ohio State University where she remained as curator of the OSU Museum of Zoology for 31 years. Her passion for freshwater snails and her years of research translated into a wealth of knowledge and expertise about these little known and often ignored mollusks. Carol was an early advocate for computerized record keeping of museum collections and her electronic database for the Ohio State University collection was one of the first in the country. She was a strong and effective advocate for river and stream conservation, leading the way for the Scenic Rivers Program of both Ohio and the rest of the country. Dr. G. Thomas Watters stated on Conch-L, “Carol, along with her advisor Dr. David Stansbery, nearly single-handedly formed the Division of Mollusks at the Ohio State University.” What Carol Stein began so many years ago is today a world-class repository of specimens and knowledge of freshwater mollusks.

When she retired from academia, Carol devoted much of her time to raising, training, showing, and adopting out dogs. She worked with show dogs, therapy dogs, and mutts that needed

homes. Carol helped educate many people on the proper care and training of dogs through her personal contacts and many talks to local clubs such as the 4H Clubs. This sparkling and upbeat lady with her positive attitude will be missed.

Katherine “Bobbi” Cordy (1938-2011)

was probably known to just about every member of COA. Certainly those who attended annual conferences, or any of several Florida shell shows through the years, or had any dealings with the Board of Directors, got to know her well. In fact it was Bobbi, some 30 years ago, who sparked, pushed, cajoled, and served as the key organizer behind the annual Astronaut



Trail Shell Club’s shell show. The last few years Bobbi served as COA Secretary, a job few would want as the benefits are nil and the responsibilities rather high. Bobbi accepted this with typical aplomb and did a great job. She and husband Jim have shelled in Guaymas and San Carlos, Mexico; numerous places off southern California; many of the Bahaman Islands; Hawaii; and the Philippines. They are, however, perhaps best known for their collecting trips to the Bahamas. Although these trips included such destinations such as Bimini and Abaco, their favorite shell collecting spot by far was Eleuthera, the “Island of Freedom.” Again and again they returned to this small jewel in the Bahamas to experience the beauty of Eleuthera and to introduce others to this wondrous place.

Most recently Bobbi and Jim worked with the Brevard Museum of Natural History to create the Johnson-Cordy Hall of Mollusks, featuring a revitalized Johnny Johnson collection as well as shells donated by the Cordy’s (see American Conchologist, vol 38, no. 2, June 2010). Also in this newly established display are many specimen shell constructs of living specimens sculpted by Bobbi. Bobbi molds and paints a living mollusk out of clay that when combined with an empty shell serves as a near perfect model of the living animal.

Bobbi often joked that she left the science part of conchology (the scientific nomenclature) to her husband Jim, while she enjoyed the beautiful shells and the wonderful people she met through her hobby. Alan Gettleman said recently, “Bobbi was a truly larger than life person, a passionate advocate for the hobby and science of shelling and a person of extraordinary energy.” The Caribbean marginellid *Volvarina cordyorum* Cossignani, 2009 was named for Jim and Bobbi Cordy. Bobbi’s energy, work ethic, good humor, and friendliness will be sorely missed by the shell collecting world.

Emmanuel Guillot de Suduiraut (1938 - 2010)

“Manou,” as he liked to be called, was born in Monségur, in the Gironde, France, in a noble family with close ties to the early French monarchy. His ancestors produced the famous Suduiraut wines, generally known as the second best Sauterne wine, of which Manou was happy to offer me a prestigious bottle on several memorable occasions. Manou was proud of his ancestry and definitely inherited many of their qualities. This is reflected in the names of shells he described, such as *Vexillum sauternesense*, after the Sauterne wines, and *Vexillum lavoisieri*, named after the French nobleman Antoine-Laurent de Lavoisier, father of modern chemistry, who lost his head in the French revolution.

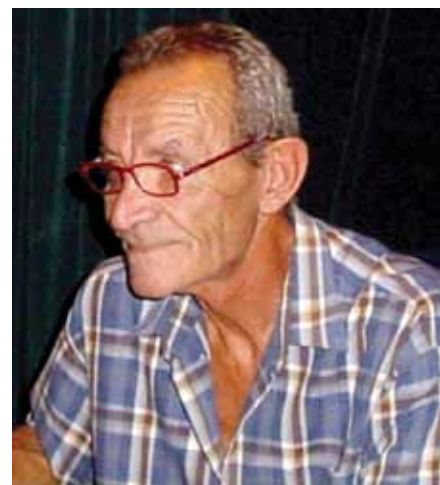
Following family tradition, Manou’s first career was in southern France as a wine-dealer. Later he joined the army and was stationed in the French Congo. This seemed to trigger a love for voyages. After his stint in the army, he traveled several months a year, and driven by a relentless curiosity, visited many countries. His adventuresome spirit saw him traveling through areas few westerners could or would travel to at that time, such as Afghanistan and Yemen. When approaching his 40s, he went to Palawan, Philippines, and fell completely in love with the place. The blue and turquoise waters with white beaches, palm trees, and beautiful people, were a strong contrast to winters in Europe.

With his typical logic and perseverance, Manou sold everything: house, car, etc., and stepped into a changed life. He rented a small island in Palawan and constructed a “beach resort.” He bought a banka [traditional Philippine outrigger boat] and started living life on a small remote island in the very remote Palawan. Every afternoon he snorkeled for hours, discovering the amazing marine life in the area. It is at that time he met Evelyne, who he married, caring greatly for her and her daughter Jacky for the rest of his life. It is also during these early years that he traveled throughout the Philippines, south to the now inaccessible Sulu Sea islands, such as Jolo. He is one of the only westerners who dived and personally collected *Cymbiola palawanica* Douté, H. & P. Bail, 1999, and collected many of the fantastic orange *Conus bandanus vidua* Reeve, 1843, forma mozoi.

Life on a small island in the tropics is pretty hard, but Manou enjoyed it until his resources ran out. When things went bankrupt, he took his banka and left. He often told of the hardships of crossing the Sulu Sea in his banka in stormy weather with only Evelyne and the small Jacky on board. Anybody who knows the dangerous Philippine waters will appreciate the guts of such an exploit. The family finally arrived in Cebu. He had about 100 pesos (about \$5 at that time) in his pocket, but he also had a hidden treasure he developed while in Palawan - a deep love for marine life and a passion for seashells. This was in the early 1980s and he soon set up a small business supplying Philippine seashells to Atlantic Seashells in Portugal.

His fine French education helped Manou a lot and he gained a reputation for quality and expertise. His client base expanded and he was soon supplying us at Poppe Shells in Belgium. It was with true delight that we opened treasure box after treasure box of Manou supplied shells. They are now dispersed in many collections all over the world, with many superb specimens in the Poppe-collection in the Koninklijk Belgisch Instituut voor Natuurwetenschappen (KBIN), Brussels [Royal Belgian Institute of Natural Sciences]. Manou went beyond the classic “buy and sell” mode and started exploring the waters of Balicasag Island with great enthusiasm. Balicasag became what it is today thanks largely to Emmanuel Guillot de Suduiraut.

Manou built a small house on Balicasag and every morning at 6 a.m., when the fishermen finished lifting the tangle nets, he would make his choice of the catch with an expert eye. Each shell he acquired was fully recorded and the records fill several books. He did this for many years, three days a week on Balicasag Island. It is difficult to explain how hard such a task is, the weekly



travel from Mactan to Balicasag takes almost one day: one hour to the harbor of Cebu, two to four hours on the sea, back one hour by tricycle all over Panglao, and finally half an hour in a very small banka in the big waves from Panglao to Balicasag Island.

Manou had the very healthy mentality that money is a “means,” so he invested much of his revenue in tangle netting, which is a rather expensive enterprise. His daily efforts brought to light much of the treasures that were the delight of the period I call the “diamond time” of shell collecting: the early eighties until the economic crisis hit the world in 2008. He was the first to put nets as deep as 360m, bringing up treasures such as the wonderful red *Perotrochus vicdani* (Kosuge, 1980) from the Balicasag-Pamilacan area.

Shortly before I moved to the Philippines, Manou started selling shells directly online and he discovered the life of a shell dealer. He was delighted with the discoveries and thrilled when transactions went well, but he was furious with the classic hassles such an activity brings. He ended his Balicasag enterprise about four years ago and Conchology, Inc., took over his last fisherman. By the end of his activities Manou had more than 5km of tangle nets in the area! This is down to a few hundred meters today and without Manou and his almost daily influx of cash, Balicasag has become a desert for shells and the local population are more oriented to the hundreds of tourists who visit daily.

During all the years Manou avidly collected Mitridae and Costellariidae, he contributed considerably to the popularization of these families. He maintained a broad network with many experts whom he generously supplied with study material. When he found a shell he thought might be new to science and that appealed to his notions of aesthetics, he tried to find an expert. Manou described a number of species, often in collaboration with other mitrid or costellariid-lovers. There have also been many shells named after Manou (this list is not complete).

Falsilatirus suduirauti Bozzetti, 1995
Trivellona suduirauti (Lorenz, 1996)
Calliostoma suduirauti Bozzetti, 1996
Clavus suduirauti Bozzetti, 1997
Lyria suduirauti (Bozzetti, 1997)
Colubriaria suduirauti Parth, 1999
Nipponaphera suduirauti (Verhecken, 1999)
Calliostoma emmanueli Vilvens, 2000
Fusolatirus suduirauti (Fraussen, 2003)
Coralliophila suduirauti Smriglio & Mariottini, 2003
Chattina suduirauti (Lamprell, 2003)
Conus suduirauti Raybaudi Massilia, 2004

Clathroterebra suduirauti (Terry & Conde, 2004)
Chilodonta suduirauti Poppe, Tagaro & Dekker, 2006
Acrosterigma suduirauti Vidal & ter Poorten, 2007
Mitrella suduirauti K. & D. Monsecour, 2009
Vexillum vicmanoui H. Turner & M. P. Marrow, 2001 (named after Victor Pagobo (nickname "Vic") and Emmanuel, nickname ("Manou"))
Calliostoma jackylenae Bozzetti, 1997 (named after his daughter Jackelyn)

Some of the mollusks named by Manou include:

Vexillum sauternesense Suduiraut, 1997
Vexillum alvinobalani Suduiraut, 1999
Mitra poppei Suduiraut, 2000
Scabricola condei Suduiraut, 2001
Scabricola lavoisieri Suduiraut, 2002
Domiporta dianneae Salisbury & Suduiraut, 2003
Mitra heinickei Salisbury & Suduiraut, 2003
Mitra schepmani Salisbury & Suduiraut, 2003
Neocancilla splendidula (Salisbury & Suduiraut, 2003)
Neocancilla rikae Suduiraut, 2004
Vexillum monalizae Poppe, Suduiraut & Tagaro, 2006
Vexillum balicasagensis Salisbury & Suduiraut, 2006
Vexillum darwini Salisbury & Suduiraut, 2006
Vexillum dautzenbergi Poppe, Suduiraut & Tagaro, 2006
Vexillum gouldi Salisbury & Suduiraut, 2006
Vexillum luigiraybaudii Poppe, Suduiraut & Tagaro, 2006
Vexillum monsecourorum Poppe, Suduiraut & Tagaro, 2006
Vexillum thorssoni Poppe, Suduiraut & Tagaro, 2006
Visaya rosenbergi Poppe, Suduiraut & Tagaro, 2006
Vexillum epigonus Salisbury & Suduiraut, 2006
Vexillum jackylenae Salisbury & Suduiraut, 2006
Vexillum evelynae Suduiraut, 2007
Vexillum poppei Suduiraut, 2007
Vexillum tanguyae Suduiraut & Boutet, 2007
Vexillum hoaraii Suduiraut, 2007

I knew Manou only for a little more than the last two decades of his life, but it must be said he was a "character" I enjoyed. We spent quite a lot of time together at various shell shows, at my house in Brussels where he stayed during his yearly visits before going to Saint Jean de Luz in southern France, and on Balicasag Island and at his place in Mactan, Punta Engano, where he lived in "native style." Manou was passionate about everything and it is with admiration that I remember him discussing philosophical matters with my friends until 5 a.m. in the morning amidst cigarette smoke and fueled by delicious wines. He read a lot, especially philosophy and natural history. He had a deep admiration for Charles Darwin - thus his *Vexillum darwini*.

With the passing of Manou, a chapter in the conchological world has closed. In the short time we shared, I got enough material to write a book on this fascinating character. He was one of the true "Adventurers" and his passing away leaves an empty place in the hearts of the ones who knew him and loved him.

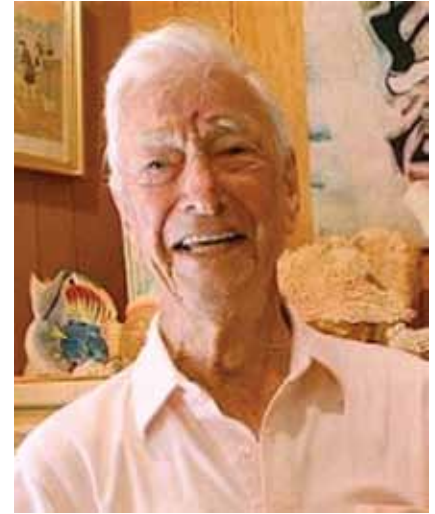
Guido T. Poppe

<http://www.conchology.be/>

<http://www.poppe-images.com/>

Trevor D. Roberts (1913-2011)

of Central Whidbey Island, Washington, was a consummate shell collector, traveler, fisherman, and without doubt one of the nicest people you could ever meet. Trevor had an extensive shell collection and had pretty much turned his island home into a attractive shell museum. Specially made shell cabinets and spacious shelving set off his shell collection to great advantage.



Trevor, wife Herriette (met while both were skiing on Mt. Rainer), and two sons Sandy and Ron, moved from Seattle to Whidbey Island in 1952. Trevor 'worked' as a salmon fisherman (a beloved passtime) and truly believed a bad day fishing was better than a good day not fishing. He and Herriette saved enough money to purchase the Whido-Isle Beach Resort, a 10-cottage seaside resort on Central Whidbey. He knew they would never get rich running a resort, but despite the hard work and sometimes long hours, it gave him many opportunities for fishing, a childhood passion. They eventually subdivided the land, selling off most of the resort as individual lots in a subdivision they named "Shangri-La Shores." The profits provided funds for travel and they did quite a bit over the next few years. This travel sparked Trevor's interest in shells and after his wife's death in 1977 he continued to travel and collect shells. When the community of "Shangri-La Shores" had a new pier constructed in 2009, they named it the Trevor D. Roberts Pier.

Trevor literally traveled the world in search of shells. A wall map in his home had the countless pins representing each stop, a stop where Trevor smiled his ever-present smile, wandered the local markets, snorkeled in the shallows, and walked the beach, talking to and making friends with the locals. There are pins all around Australia, throughout the Pacific, Indonesia, the Philippines, South America, Sri Lanka, Europe, etc. Each stop was a shelling opportunity and a chance to meet and make new friends. Trevor liked people and he liked making friends. He was incredibly easy to talk to and always seemed genuinely interested in other people and their stories. He has been a member of the Pacific Northwest Shell Club for over two decades and any member will tell you, it is a true pleasure to have known this warm and friendly man.



